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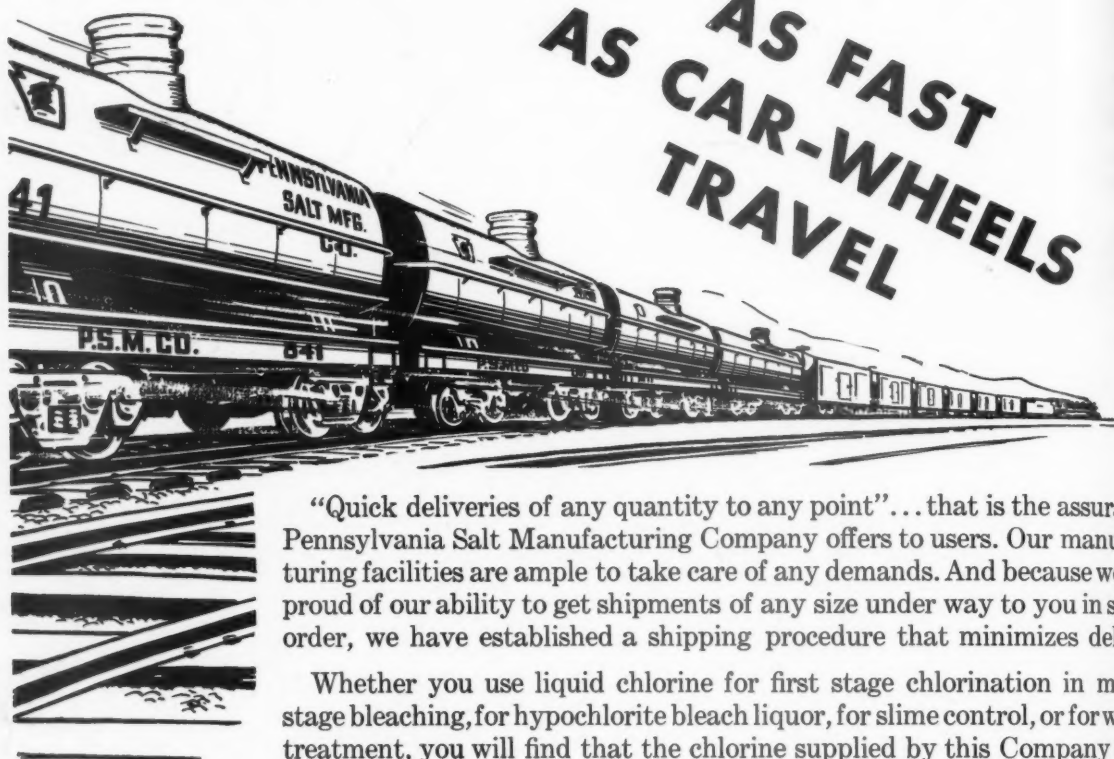
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*Pacific*  
**PULP & PAPER**  
*Industry*

THE ST. REGIS KRAFT COMPANY  
Tacoma, Washington  
JUNE 1937

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JUNE • 1937

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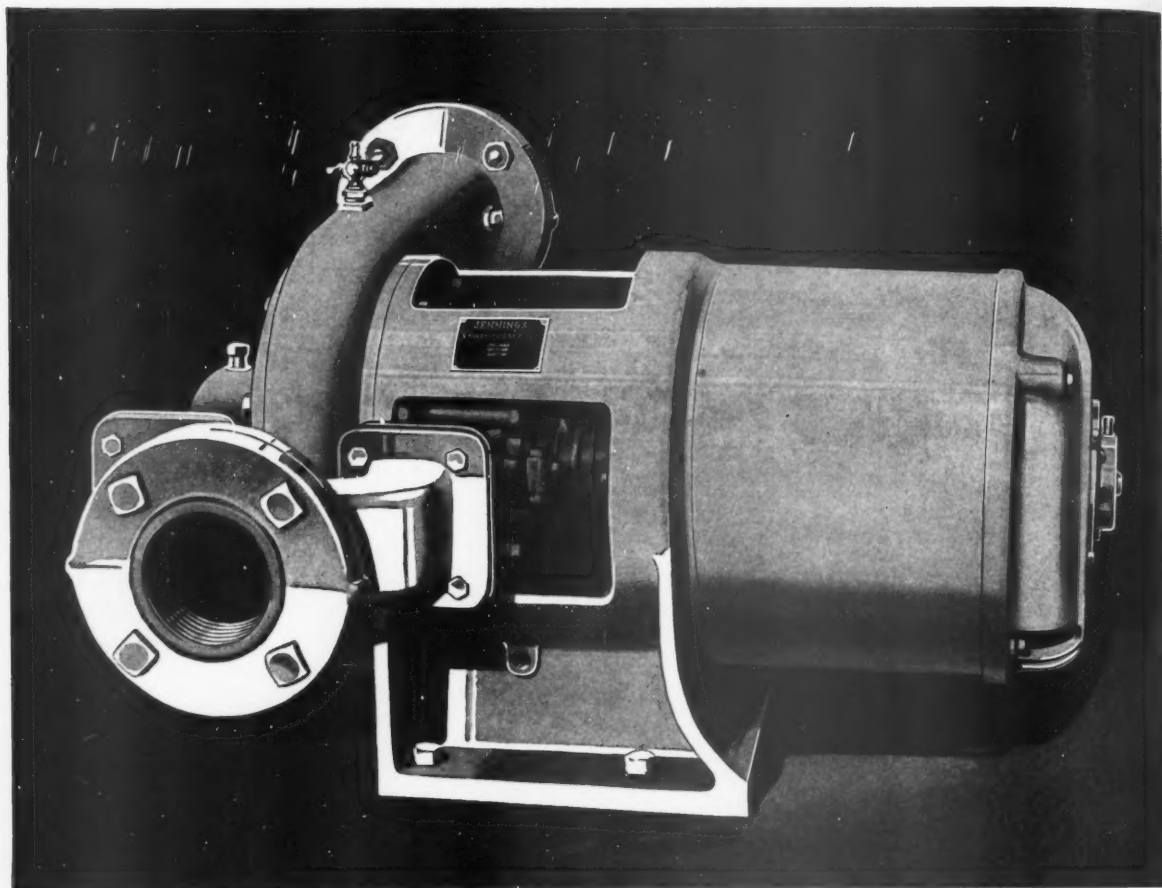
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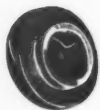
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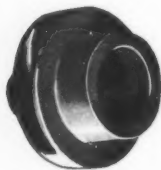
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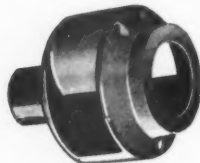
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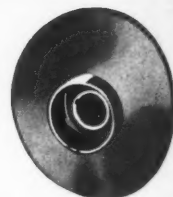
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## **Pacific PULP & PAPER Industry**

*The Journal of the  
Pacific Coast Industry*

JUNE • 1937

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## Puget Sound Proposes New Unbleached Mill

**A**NNOUNCEMENT was made in June by Ossian Anderson, president of the Puget Sound Pulp and Timber Company, that construction will begin August 1st on a new 125 tons per day unbleached sulphite pulp mill unit at Bellingham, Washington, providing certain contingencies are eliminated, such as the vacating of streets by the City of Bellingham.

The proposed unit would adjoin the present 110 tons per day unbleached sulphite pulp mill. It is to be separate from the old with the exception of the log break-down mill, which will furnish wood for both mills, and a new chipping plant which will be used in common.

It is expected that the new plant will be ready for production in seven months from the time construction begins early in August of this year, dependent, of course, upon the elimination of the remaining obstacles.

The new mill will be located between the present mill and the company's dock and breakdown plant, which was purchased from the Morrison Mill Company in the fall of 1936.

Construction will be of brick and steel. The present breakdown plant will be remodelled and modernized. A new chipping plant will be built of brick and steel and will supply both the new and the old units. A new digester building, riffling and screen rooms, blow pits, storage chests and machine building will be constructed.

The new machine room will house two of the Flakt type pulp dryers, one for drying the pulp produced in the new unit and the other the pulp from the present mill. Upon completion of the machine room the slush pulp from the present mill will be routed to one of the new Flakt dryers and the shredded pulp dryers dismantled. The design of the machine room will be new to the Pacific

Coast taking maximum advantages of the design of the Flakt dryers. Dryers and machine room are being designed as an integral unit.

The present deep water docks adjoining the breakdown plant will be rebuilt with new piling and planking.

### Bellingham Water Rate Approved

The expansion of the Puget Sound Pulp & Timber Company's unbleached sulphite productive capacity in Bellingham has depended in part upon obtaining a favorable water rate from the City of Bellingham in addition to a guarantee that the city will furnish a specified gallonage when the company's operations require it.

After a protracted period of negotiation during which time the City of Bellingham had a survey made of available water resources, a schedule of water rates was finally approved by the Bellingham city council on June 7th.

The new water agreement provides for a rate of \$9 per million gallons on a basis of 3,000,000 gallons per day. An additional 6,000,000 gallons per day will be supplied the company at a rate of \$8 per million gallons. An additional 10,000,000 gallons will cost the company \$7 per million gallons. Should the company require a further additional gallonage of 20,000,000 gallons per day the contract calls for a payment of \$8 per million for the first five years and \$7 per million for the next fifteen years. These total 39,000,000 gallons per day. The contract recognizes the possibility of an ultimate demand amounting to 49,000,000 gallons per day. If this additional 10,000,000 gallons are required the con-



**RALPH M. ROBERG**  
Sales Manager  
Puget Sound Pulp & Timber Co.



**WALTER DeLONG**  
Operating Manager  
Puget Sound Pulp & Timber Co.

tract fixes the rate at \$7 per million gallons for this latter 10,000,000 gallons.

With the water agreement signed the Puget Sound Pulp & Timber Company is now in a position to clear up other details preparatory to the starting of construction of the new 125 tons per day unbleached sulphite pulp mill at Bellingham, Washington.

### DeLong Named Operating Manager

Effective June 1st Walter DeLong was made operating manager and Ralph M. Roberg sales manager for the Puget Sound Pulp & Timber Company, according to an announcement by Ossian Anderson, president.

Mr. DeLong, whose headquarters have been at Clear Lake for the past several years, has been in charge of the company's logging and purchasing. In his new work he will have charge of all operations and will supervise the construction of the new unit, handling the necessary purchases as well. He is now located in the company's new offices in the Herald Building in Bellingham.

Mr. Roberg, whose time has been devoted more and more to sales work, has been named sales manager for all the company's products. He will also have his office in the Herald Building in Bellingham.

### Puget Sound Declares Dividend

At a special meeting of the directors held on June 1st, a dividend of 50 cents per share on the common stock of the Puget Sound Pulp & Timber Company, was declared out of the net profits of the company for 1937.

This dividend was paid June 20th, 1937 to stockholders of record at the close of business on June 3rd, 1937.

### Alex Galloway Dies in San Francisco

Alex B. Galloway, general sales manager of the Oregon Pulp & Paper Company and vice-president of the Western Paper Converting Company, died in San Francisco June 7th following a stroke suffered a few days previously.

Mr. Galloway was en route home after a six weeks business trip East. Mrs. Galloway reached her husband's side shortly before he passed away. She was visiting in Nebraska when Mr. Galloway was stricken.

He entered the paper industry at the age of 20 when he began work for the old Blake, McFall Paper Company of Portland, which is now Blake, Moffitt & Towne. Later he became manager of the American Paper Company in Seattle where he remained for 14 years, joining the Oregon Pulp & Paper Company's sales organization in 1926 in San Francisco. In 1929 Mr. Galloway was transferred to the mill at Salem, remaining a year before moving to headquarters in Portland.

Mr. Galloway was a veteran of the Spanish-American war, a thirty-second degree Mason of Nile Temple in Seattle, and a member of the Elks. He had been in poor health for a year and a half.

A son, R. Lee Galloway is with the Hawley Pulp & Paper Company.

## Wage Contract Renewed, Base Rate Increased

For the fourth year in succession the contract between the pulp and paper manufacturers on the Pacific Coast and the two pulp and paper brotherhoods was renewed May 31st with changes increasing the base pay rate 10 cents an hour and providing for overtime and Sunday work.

This increase represents about \$200 per year per man and woman on an hourly basis only. The change in the overtime basis will average close to \$100 per year per employee, making a total of \$300 average increase per employee under the new contract.

It is estimated that the additional earnings of the 15,000 employees in the thirty-two Pacific Coast pulp and paper mills, parties to the agreement, will approach \$4,000,000 more than their 1935-1936 earnings.

Following preliminary meetings of the unions in Everett, Washington, and of the employers in Seattle, the representatives of the two groups met in Seattle on May 19th, the conference lasting until the 25th, when the agreement was submitted to a vote of the entire membership on the Pacific Coast of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers and the International Brotherhood of Paper Makers.

Special meetings of the locals were called and secret ballots taken. Votes were not counted by locals but as a whole.

When the votes all reached Seattle and were counted by a special committee of the delegates which had remained after the conference the agreement was found to have been ratified by a vote of 6,190 to 2,797. With the agreement approved by the union members as a whole it then remained for each local to sign its mills.

The agreement covers wages and working conditions in thirty-two plants from Bellingham, Washington, to Los Angeles, California, and approximately 15,000 men and women are affected. Forty-three separate local unions voted on the agreement.

As in the past the new agreement is fundamentally an extension of the previous year's agreement with such changes made as were mutually agreed upon by the delegates and approved by the members.

However, this was the first year the agreement after being signed by the union delegates was referred to a referendum of the entire membership. This method was adopted to eliminate as far as possible dissatisfaction on the part of one or more locals with the results achieved in the bargaining by the delegates.

The new agreement raises the base pay rate from 52½ cents to 62½ cents an hour for men and for women the new minimum is 50 cents. This increase of 10 cents per hour applies to every job in the mills and brings some of the classifications up to \$1.50 per hour.

It is reported that less than 10 per cent of the men and women employed by the pulp and paper industry on the Pacific Coast are paid the minimum rate.

The average rate which will be received under the new agreement is said to be 30 per cent higher than the average for any other pulp and paper making region in the United States.

Other clauses in the new agreement provide for time and one-half for Sunday work, and the same for all work in excess of 40 hours in one week. Last year's agreement included time and one-half for work done on holidays and in excess of 8 hours in one day and these were retained in the new agreement.

This year a seniority clause was inserted. The agreement is from May 31st to May 31st, 1938.

The success of the collective bargaining agreement between the two brotherhoods and the pulp and paper mill employers on the Pacific Coast is heartening to both labor and industry. No time has been lost by any worker in the Pacific Coast industry by reason of strikes or lockouts. The most favorable wage rates and working conditions in the industry have been obtained by sitting down at the conference table.

The agreement is a tribute to the leaders of the brotherhoods to the leaders of the Pacific Coast industry, and also to the membership of the unions in this part of the country.

The negotiations are arranged and conducted, for the two International Brotherhoods, through the Pacific Coast Pulp and Paper Mill Employees Association.

For the manufacturers operating the thirty-two mills and plants, the arrangements are handled by the Pacific Coast Association of Pulp and Paper Manufacturers.

The agreement itself, although jointly negotiated, and uniform for the entire coast, is signed separately for each mill. The parties to each agreement are the mill company on the one hand, and International Brotherhood of Paper Makers and International Brotherhood of Pulp, Sulphite and Paper Mill Workers, as the other contracting party.

The employees in the thirty-two mills, numbering nearly 15,000, are represented by the two International Brotherhoods through forty-two Locals. The mills and the union locals are located in Washington, Oregon and California from Bellingham, Washington, to Los Angeles, California.

### Bob Huer To Attend Meeting

H. R. (Bob) Heuer, operating superintendent of the Pulp Division Weyerhaeuser Timber Company at Longview, Washington, left June 14th for a month's trip East. Mr. Heuer will attend the annual meeting of the American Pulp and Paper Mill Superintendents Association in Springfield, Massachusetts June 23rd, 24th and 25th.

Before returning to Longview he will visit a number of mills.

## Establish Unions At Powell River

First steps towards unionizing the plants of British Columbia pulp and paper manufacturers were taken late in May when organizers representing the American Federation of Labor established Powell River Company's workers in the International Brotherhood of Pulp, Sulphite and Paper Mill Workers, and the Brotherhood of Paper Makers.

The company made no effort to resist unionization; in fact the ballot was taken on the order of the company. Powell River Company issued a statement saying that it would act "in the best interests of its employees on the result of this ballot, and it is distinctly understood that no employee will be discriminated against in any way through the result of voting."

The company has granted two voluntary pay increases during the past year.

The union will endeavor to enlist workers in the plants of Pacific Mills, Ltd., at Ocean Falls; B. C. Pulp & Paper Company at Port Alice and Woodfibre, and Port Mellon Operating Company at Port Mellon. The proposal is to effect an alliance between employees of the five British Columbia pulp and paper mills and the 14,000 unionized workers in the industry along the United States Pacific coast.

At Powell River the vote was taken among 1350 eligible men, resulting in 1132 being in favor of unionization and 106 against. Harvey White, of Everett, representative of the brotherhood, said he had received nearly 1,000 applications for membership in the two unions he represents.

A new agreement between union men in the United States and the Northwest Employers Association sets a new basic wage scale of 62½ cents as at June 1, replacing with a blanket 10 cents increase the present scale of 52½ cents. It is figured on a 40-hour week basis.

Inasmuch as Powell River and other British Columbia plants are now on a 48-hour week basis, the adjustment of time and wages will be a matter for negotiation.

Defining the attitude of the company towards unionization, Powell River Company issued a circular letter to all employees prior to balloting, as follows:

"We understand that there is a certain amount of activity in the district to organize a labor union among the employees of our company. No doubt there are many who favor a unionized plant. There are also many who are not in favor of having a labor union in the Powell River mill.

"It is the policy of the management to encourage the cooperation of all the company's employees. Therefore, for the purpose of obtaining the opinion of our employees, a secret ballot of all employees (excluding salaried men) will be held with a properly sworn-in returning officer, who is not an employee of the company, in charge of the ballot box, and scrutineers selected from the mill employees.

"Vote according to your best judgment. The company proposes to act in the best interests of its employees on the result of this ballot, and it is distinctly understood that no employee will be discriminated against in any way through the result of this voting."

Superintendents arranged for time off to facilitate the voting.

## Everett Lets Cutting Contract

Early in May the Everett Pulp and Paper Company lets a contract to Buntze and Hendricks of Mount Vernon, according to Fred Buntze, to cut all the cotton-wood trees at the head of Lake Wenatchee above Cougar Inn.

Over 15,000 cords will be cut and it is expected the work will extend over a period of four years, due to the fact that work can be carried on only six months of each year because of heavy snowfall. When the camp gets into operation it will employ over 40 men.

The Everett Pulp & Paper Company owns the timber and it will be shipped to their plant for manufacture into paper.

## Ferdie Schmitz With Seattle Firm

Ferdinand Schmitz, Jr., who has been doing special work for the Crown Wilmette Paper Company division of Crown Zellerbach Corporation for the past several months, left Portland June 1st to join the Pacific Car & Foundry Company in Seattle.

## Idaho Chemists Secure Appointments

Three graduate students in the Idaho School of Forestry, who are working on problems dealing with the chemical utilization of wood, have received appointments at other institutions for next year, which will enable them to work toward their Ph.D. degrees.

Samuel Woodruff of Blackfoot, Idaho, has a research assistantship at the Forest Products Laboratory, Madison, Wisconsin. There he will work under Dr. A. J. Stamm, widely known for his researches on the colloid chemistry of wood. There is a cooperative arrangement between the Forest Products Laboratory and the University of Wisconsin, so that Mr. Woodruff will be registered at the University of Wisconsin and will work toward his degree at that University.

George Nordblom of Pittsburgh, Pennsylvania, has an assistantship in the Department of Chemical Engineering of the University of Cincinnati.

Sydney Coppick of Montreal, Canada, has a demonstratorship in the Department of Chemistry at McGill University, Montreal.

At the Idaho School of Forestry both Mr. Nordblom and Mr. Coppick hold fellowships given by Potlatch Forests, Inc., of Lewiston, Idaho, for research in the chemical utilization of wood.

## Flower Pots From Paper and Pulp

A new fibre plant has been launched at Santa Cruz, Cal., by the W. P. Lass Co., Inc., to produce hollow ware such as flower pots, milk bottles, bowls and other containers. At present, production is confined to flower pots, saucers and bulb bowls.

W. P. Lass, manager of the company, says florists are taking the output as fast as it can be turned out. The trade name is "Fibre-lite."

Stock for the operation is made up about 90 per cent of old newspapers and

the balance sulphite pulp from Spaulding Pulp & Paper Co. of Newberg, Ore. Mr. Lass has worked out a revolving machine, with forms for three sizes of pots and arms that pick up the fibre stock and press it into the container form. The flower pots are turned out in 4, 5 and 6-inch sizes.

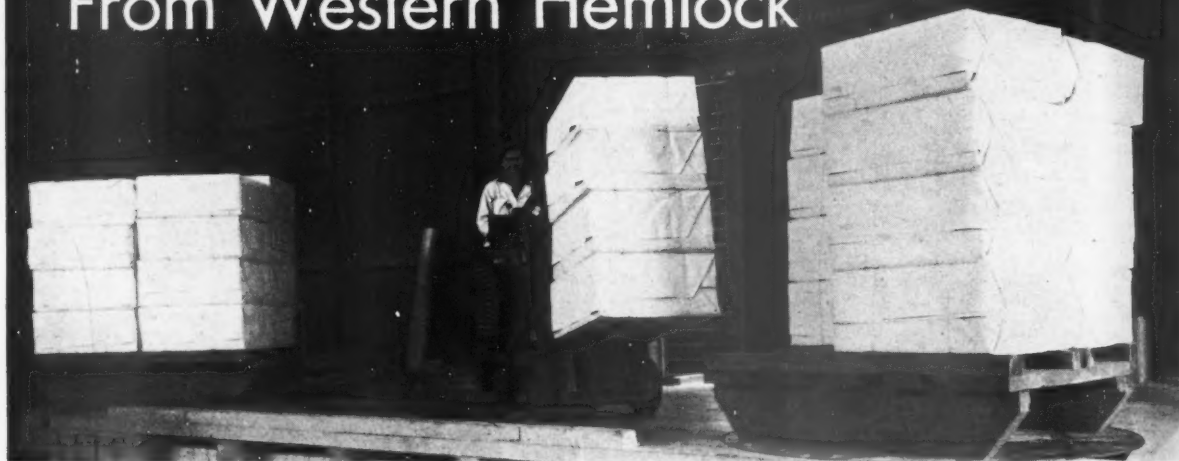
Mr. Lass formerly was connected with the now abandoned Alaska Pulp & Paper Company ground wood mill on the Speel River, about 40 miles south of Juneau, Alaska. Associated in the Lass company at Santa Cruz, as a director, is E. P. Kennedy, formerly president of the Alaska company.



W. P. LASS and his paper flower pots, manufactured at Santa Cruz, California.



# St. Régis Making Full Bleached Kraft at Tacoma From Western Hemlock



**W**ITH the production of full bleached kraft pulp for market by the St. Régis Kraft Company, subsidiary of the St. Régis Paper Company, the Pacific Coast pulp industry achieves further world-wide recognition as a growing center for the manufacture of high quality pulps. With its sulphite pulps well established in world markets within the short span of ten years, the Pacific Coast pulp industry now offers domestic and foreign consumers a quality bleached sulphate pulp.

The St. Régis Kraft Company mill at Tacoma, Washington, with its newly finished bleaching plant, which is said to be the most modern in the country, is the first producer for market of fully bleached kraft pulp from Western hemlock.

Western hemlock is not new to the West Coast kraft industry. It has for a number of years furnished the principal raw material for the quality kraft papers produced by Pacific Coast paper mills. It possesses superior qualities for the making of kraft pulp and paper.

Nor is partial bleaching of kraft new to the Pacific Coast. Some mills have produced semi-bleached kraft papers for several years. As the demand grew for lighter colored kraft papers the Coast mills responded, meeting their customers' requirements.

The new development embodied in the entrance of the well known and long established St. Régis Paper Company into the ranks of Pacific Coast pulp producers, is the manufacture for market of a high quality, fully bleached kraft pulp from Western hemlock. It represents the establishment of a new type of pulp manufacture in this region.

Although the reconstructed St. Régis Kraft Company 160 tons per day mill resumed operations the latter part of last November, the new bleaching plant was not completed until early in May. This

modern plant has sufficient capacity to bleach the entire mill output whenever it is found desirable to do so.

## Mr. Ferguson's Statement

Upon the completion of the bleaching plant and the start of its successful operations, Roy K. Ferguson, president of the St. Régis Paper Company and of the St. Régis Kraft Company, visited the Tacoma mill. Upon his return to New York he issued the following statement to this journal:

"My recent visit to the Pacific Northwest sent me away highly enthusiastic about the region, its people and its natural resources. The magnificent timbered mountains, scenic lakes and rivers, together with extensive national and state parks make for an ideal vacation land.

"I was especially impressed with the vast timber resources which have served to build up the pulp industry with such rapid strides during recent years, and which would seem to assure an adequate supply of pulpwood for the continued expanding requirements of this growing business.

"These natural advantages were factors in impelling our Company to select the Pacific Coast for the substantial additional investment recently made in our mill at Tacoma in order to produce bleached kraft pulp. It gives me great pleasure to have our Company included in the progressive pulp and paper industry on the Pacific Coast."

## Mr. Anderson's Statement

The following statement concerning

the production of bleached kraft pulp in the Tacoma mill was made to PACIFIC PULP & PAPER INDUSTRY by Olesian Anderson, executive vice-president and resident director on the Pacific Coast of the St. Régis Kraft Company:

"The reconstruction of the St. Régis Kraft Company's plant at Tacoma, Washington, marks another major step forward in the development of the Pacific Northwest Pulp Industry.

"The Pacific Coast is to be congratulated on this new addition to its manufacturing facilities, especially because the St. Régis Paper Company, of which the St. Régis Kraft Company is a subsidiary, is one of the most important factors in the domestic pulp and paper industry.

"That they should elect to cross the continent to pioneer the development of Full Bleached Kraft Pulp from Western hemlock is evidence of the ideal manufacturing conditions and wood resources that exist on the Pacific Coast.

"Bleached Kraft heretofore produced in general has not been available for purchase from domestic sources. Most of this pulp is either imported, produced by domestic mills from imported unbleached kraft, or bleached in self contained paper mills manufacturing both pulp and paper. The output of the Tacoma plant of 65,000 tons annually will be sold in the domestic market and for export.

"A number of new advanced features have been incorporated in method and mechanical devices employed in this plant to insure the latest up to date process in manufacturing this newest of pulps, now making rapid progress as a high grade paper and cellulose material."



## Modernization Program

In 1928 when the Tacoma kraft pulp mill was built by the Union Bag and Paper Power Corporation it was considered the most modern of sulphate mills. During the intervening nine years the progress made in methods and equipment for sulphate production necessitated a complete modernization of the plant.

When it was decided early in 1936 by the St. Regis Paper Company, who had acquired the mill in 1931, to reopen the plant, Hardy S. Ferguson, pulp and paper mill engineer was engaged to lay out the plan for modernization and the construction of the bleaching plant. In this work he was assisted by Harold D. Cavin, resident engineer for the St. Regis Kraft Company in Tacoma. Mr. Ferguson designed the original mill and supervised its construction in 1928.

St. Regis announced its plans in May, 1936, and work began shortly thereafter on the reconstruction of the Tacoma mill.

The modernization work and the construction of new buildings together with the installation of new and modern equipment, will be taken up in production order.

## Wood Preparation

Raw material is Western hemlock, principally camp run saw logs, but provision has been made at considerable expense to handle cord wood brought in by farmers and pulpwood contractors, thereby furnishing additional income to a number of local people.

The sawmill, or log breakdown mill as it is more commonly called, is of the modern high speed type. It was designed by Guy F. Mitchell.

Logs up to six feet in diameter and from eight to twenty-four feet in length

can be accommodated in the breakdown mill. An electric drag saw mounted on a float in the log pond is employed for cutting the larger logs into suitable lengths. The log haul consists of a heavy round link chain fitted with log brackets for conveying the logs into the mill.

On the log deck a circular cut-off saw cuts the small logs into proper lengths. Modern deck machinery consists of a log kicker, deck stop, a Simonson type log turner, a steam nigger and an overhead canter.

The carriage was specially built, extra heavy with a three block rack and pinion. It is fitted with offsets and power setworks. All of the knees have taper movements and the carriage is driven by a shotgun feed.

There is a nine-foot band mill, ten-inch edger, a trimmer and a steam swing up saw. These together with live rolls and transfers comprise the principal units employed in breaking down the logs into cants.

The cleaning room contains two Stetson-Ross power feed barkers, one for large cants and the other for small cants and slabs.

### In Operation

In operation, the logs are brought into the mill by means of a log haul, graded and cut to desirable lengths, by means of a circular log cut-off saw. There is ample storage capacity upon the log deck to maintain a constant flow of material through the mill.

The logs are broken down into heavy cants and through taper sawing of the logs, the slabs and bark faced cants are cut to approximately uniform thickness. This permits a higher rate of feed through the barkers. When these slabs or cants are wider than the barkers will accommodate, they are passed through the edger and ripped to such widths as will permit them being barked.

All slabs and bark faced cants are passed over the trimmer where large knots and defects are trimmed out of the larger size pieces. These pieces are delivered by means of live rolls and transfers to the barkers. Thin slabs and waney edgings from the heavier cants are put through the trimmer and slashed into 4 ft. lengths and are conveyed to the salvage department located on the lower floor of the mill.

This salvage department consists of two double concave head hand slab barkers and a single saw bolter. After cleaning, these smaller pieces are put through a 64-inch Sumner chipper and the chips delivered onto the main chip belt.

All of the clean inside wood is put through the edger and conveyed to the rear end of the mill where is located a steam swing-up saw, which is used to cut the clean cants into maximum lengths of 12 ft. These shorter pieces are delivered by means of steam flippers onto the clean wood transfer. Ample space has been provided for the removal of an occasional waney edge and delivery of the cants to either one of two conveyors leading to the chippers.

All of the material coming from the barkers is delivered to another transfer, which is also arranged in such a manner as to permit the wood being delivered to either one of the conveyors leading to the chippers.

## Chipping and Screening

Washing showers are provided for all conveyors to the chippers and the wood is thoroughly inspected for defects before it enters the chipping and screening building.

This is a new brick and steel building housing the chippers, chip crusher and the three large chip screens. It adjoins the log breakdown plant as will be noted in the diagram of conveyors.

The chipping plant represents a further advance in mechanical equipment and arrangement to insure uniform chips, free of sawdust, black knots and uneven length chips.

The two 84-inch Sumner chippers have hooded discs with vanes on the rear face of the disc which blows the chips through an overhead discharge into a cyclone. This breaks up the cards to such an extent that practically all of the accepted chips are salvaged at the first screening. Doughty knots are thoroughly broken up and the dirt usually resulting therefrom is practically eliminated by the two shaker type Hesse-Ersted and one Sumner chip screens.

Oversize chips and slivers pass through a chip crusher and are returned to a belt feeding the screens. The accepted chips are then conveyed to the 380-foot main chip belt furnished by the Link-Belt Company, which takes them to the storage bins over the digesters.

Because the St. Regis Kraft Company desires to produce the cleanest bleached kraft pulp possible, extreme care is exercised in the wood preparation department to provide dirt-free wood for cooking.

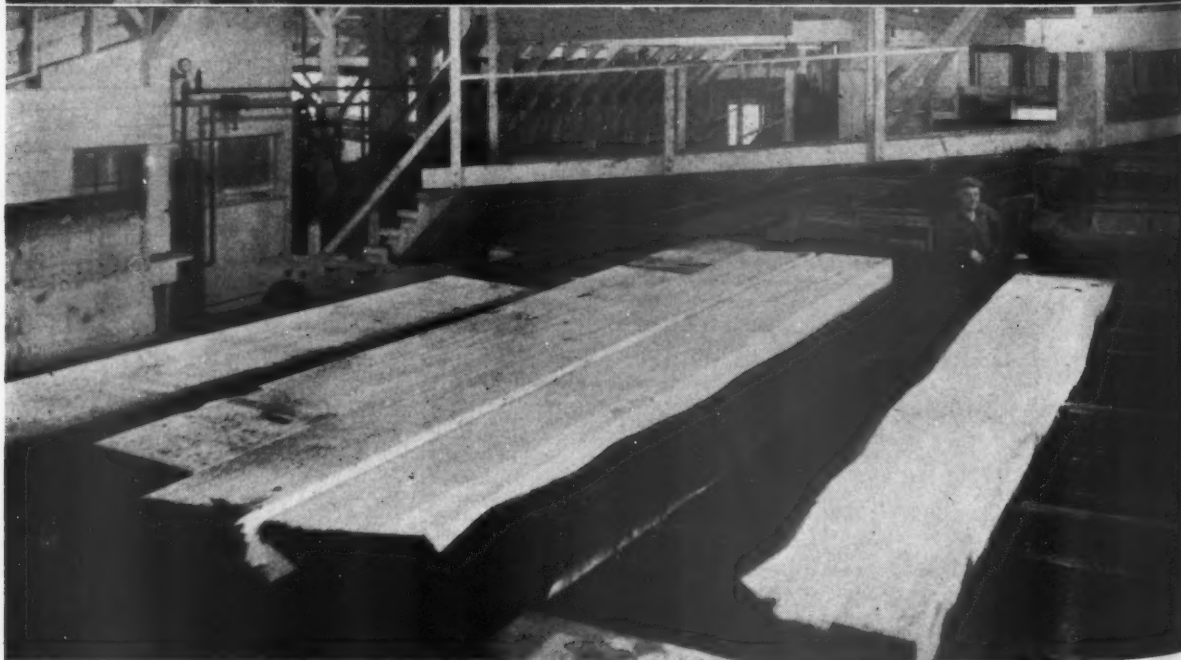
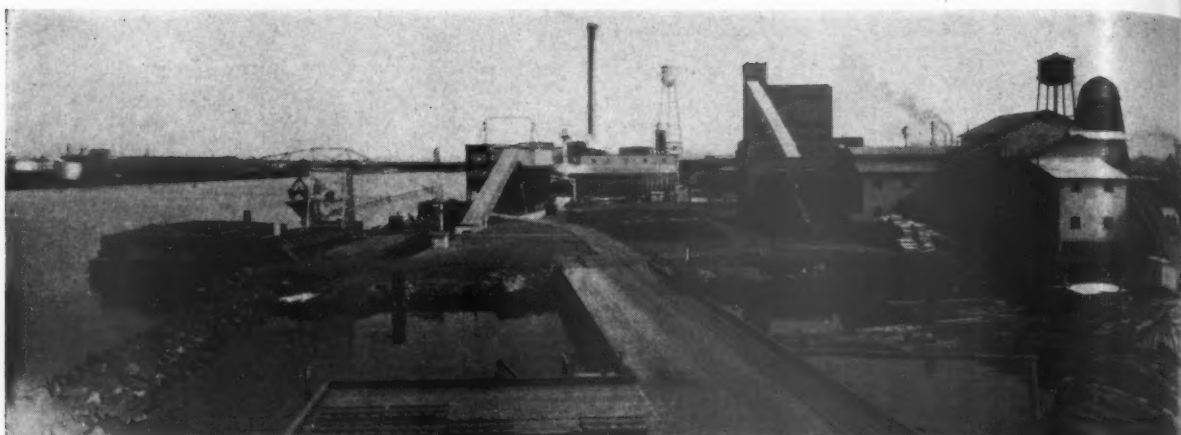
When the Tacoma mill was built in 1928 the wood preparation plant was not designed for bleached pulp. It consisted of a slasher mill which cut the logs into four-foot lengths. They were then split and barked in a barking drum. This arrangement did not supply sufficiently clean wood for bleached pulp.



**OSSIAN ANDERSON**  
Executive Vice-President  
St. Regis Kraft Company



**ROY K. FERGUSON**  
President St. Regis Paper Co.  
St. Regis Kraft Company



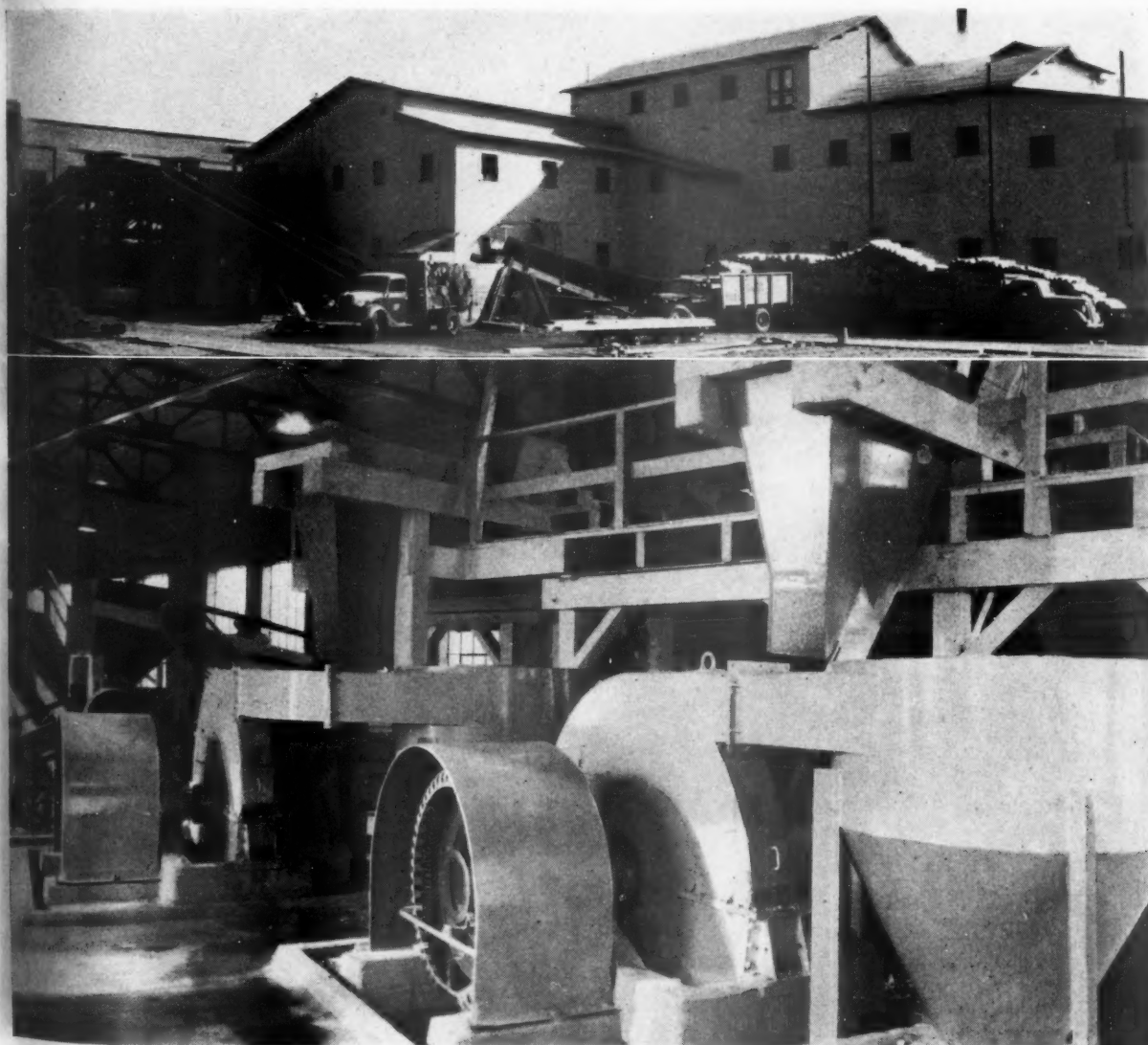
## Cooking and Washing

ON THE OPPOSITE PAGE at the top, is a view of the mill from the ocean dock showing the hogged fuel unloading system at the left and the log breakdown plant at the right >>> IN THE CENTER is the log carriage in the breakdown plant >>> AT THE BOTTOM appear some of the hemlock cants coming from the sawn logs. ON THIS PAGE is shown the cordwood handling system with the log breakdown plant in the background >>> THE BOTTOM PICTURE shows the two 84-inch chippers with overhead discharge into cyclones.

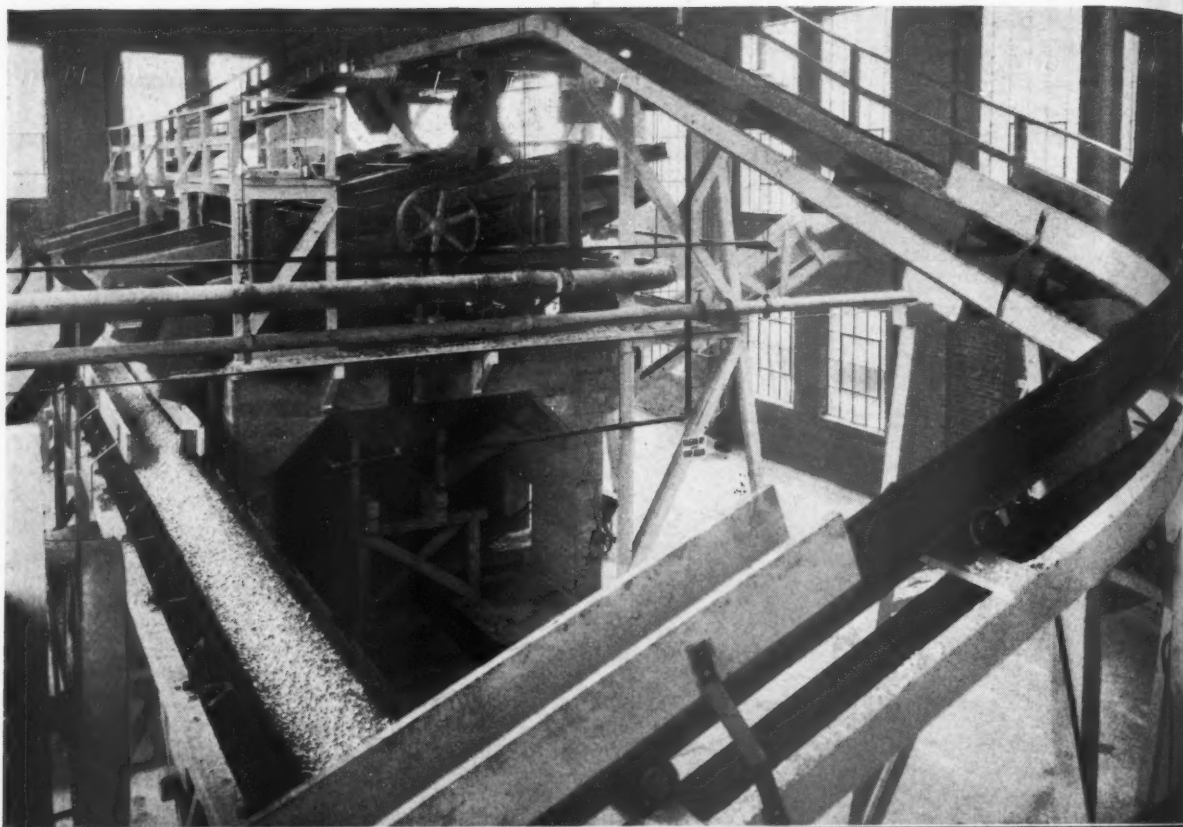
The cooking system on the four stationary digesters has been changed from the former operation and a more rapid liquor circulating system provided. Other features have been added including instruments for controlling and recording the cooking processes.

Originally the pulp washing system was of the single stage filter type. A dual system has been installed to rapidly remove cooking liquor from the pulp within a few minutes after the blowing of each digester. This dual system is in reality a three stage system; the first two stages being a counter-current system. The original Oliver washers were rebuilt to the modern Oliver-Young type and one new Impco eight by twelve vacuum filter was installed as a primary washer.

THE SMALL PHOTO shows cleaned cants being washed and conveyed into the chipping plant.







AT THE TOP are the chip screens and conveyors >>> BELOW the digester operating floor >>> An operator stands in front of the instrument panel.

No. 8, new bleach unit; No. 9, new 50-ton blending tank; No. 10, machine room and pulp storage building; No. 11, new water filter plant; No. 12, causticizing plant; No. 13, power house; No. 14, new hogged fuel unloading conveyors and hogged fuel storage building.





Identifying the Several Departments of the St. Regis Kraft Company's Bleached Sulphate Pulp Mill at Tacoma, Washington.

No. 1, the new dock; No. 2, the new log breakdown mill; No. 3, the new chipping plant; No. 4, log storage pond; No. 5, new chip conveyor; No. 6, digester building; No. 7, new screen room; No. 8, new bleach plant; No. 9, new 50-ton blending tank; No. 10, machine room and pulp storage building; No. 11, new water filter plant; No. 12, countering plant; No. 13, power house; No. 14, new hogged fuel unloading conveyor and hogged fuel storage building.

## Screening Riffling

Knotters and cylindrical screens constituted the former equipment when unbleached kraft was produced. Included in the modernization program was the construction of a three-story brick and steel riffling and screening building. Now the pulp after washing passes to the knotters, the cylindrical screens, onto seven new rifflers and thence by gravity onto twenty-eight Smythe Multivar Flat Screens.

This method insures maximum cleanliness of the pulp before it is thickened and pumped into a brown stock blending system consisting of chests which are arranged to thoroughly blend the stock prior to bleaching.

## Bleaching

The new St. Regis bleach plant has been designed to incorporate and to improve upon the best methods known for bleaching kraft pulp. Of the four stage type it is capable of producing 175 tons per day of fully bleached kraft pulp.

Said to be the last word in design for the bleaching of kraft the system employs a combination of the Hooker Electrochemical Company's continuous pressure type chlorinator, a retention period, one stage caustic and two stage hypochlorite system; the latter known as the Thorne Bleaching System. Every step in the bleaching process is under the control of the operators through the use of recording and controlling instruments. These are centrally located on a panel on the operating floor, permitting centralized control of all the functions of the bleaching system.

A special laboratory has been setup in the center of the bleach plant operating floor to provide immediate testing and checking and to eliminate the time lag which would occur were the bleach testing done in the main laboratory.

Production of bleached kraft pulp in the new bleach plant during May and early June resulted in a product which in every way met the company's highest expectations.

Outstanding features of the St. Regis bleaching system are quality of pulp produced, flexibility of operation and economy in the use of chlorine and caustic soda.

The equipment for the chlorination system was supplied by the Hooker Electrochemical Company and for the Thorne System by R. S. Baker of Beebe, Quebec. The Thorne equipment was built by the Improved Paper Machinery Corporation of Nashua, N. H.

After bleaching the stock is again blended in a 50-ton blending tank, where agitation is provided through a large Western Gear Works gear drive.

## Drying

In determining the method of drying their bleached and unbleached kraft pulp the St. Regis Kraft Company endeavored to obtain the maximum in uniformity, strength retention, cleanliness, color and hydrating qualities.

Two Flakt hot air dryers were installed, the first of their kind on the North American continent. These consist of two complete fourdrinier wet end sections coupled to continuous sheet air dryers.

The wet ends were designed by the Karlstad Works and consist of a wire part with ordinary couch, two K. M. W. patented rotary suction boxes, three wet presses and two predrying cylinders, each 49 1/4 inches in diameter. The wet ends are designed so that the pulp web leaves the third press 52 per cent air dry.

The Flakt dryer, designed by Svenska Flaktfabriken, consists of an enclosed drying chamber 105 feet long, 12 1/2 feet wide and 16 1/2 feet high. The roof, bottom and two longitudinal sides are entirely covered with sheet iron and fully insulated. The gables, or inlet and outlet ends are equipped with revolving windows.

Inside the dryer consists of a number of vertical intermediate sections, all alike. At each end is an end section where conveyor shafts and turning rolls are placed. The drying chamber is further divided into longitudinal, horizontal channels, separated by solid sheet iron partitions.

The pulp web passes back and forth inside the Flakt dryer thirteen times, hot air being constantly circulated against both sides of the sheet.

Adjustable platforms are located at the inlet and outlet ends of the drying chamber. These platforms, which are intended principally for the workmen to start the machine, are vertically adjustable by means of manually operated controls.

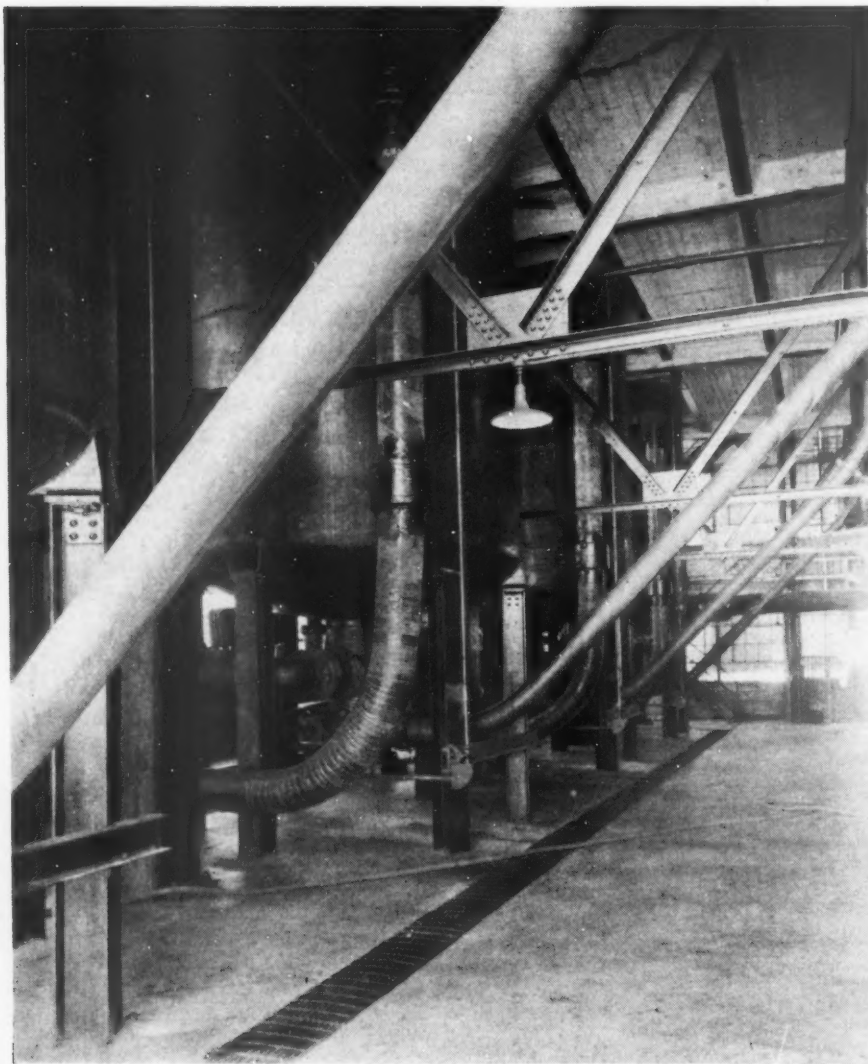
The thirteen conveyors for carrying the pulp web through the machine are of very strong forged steel with carrying links, furnished with rolls and solid drawn tubes for carrying the web. The chain drives run on guide rails at the sides of the dryer. Heating coils are of forged, gilled pipes with connections placed inside the dryer.

The drying chamber is equipped with a disconnecting device for automatic disconnection of the fan dryer and the cutter in case of a rupture of the pulp web.

**ON THE LEFT** is the main floor of the digester building.

**TO THE RIGHT** on the opposite page the bottom picture shows part of the seven rifflers and **ABOVE** a portion of the new screen room with twenty-eight flat screens.

**THE VERTICAL** picture is of the Hooker chlorinator in the new St. Regis bleaching plant.



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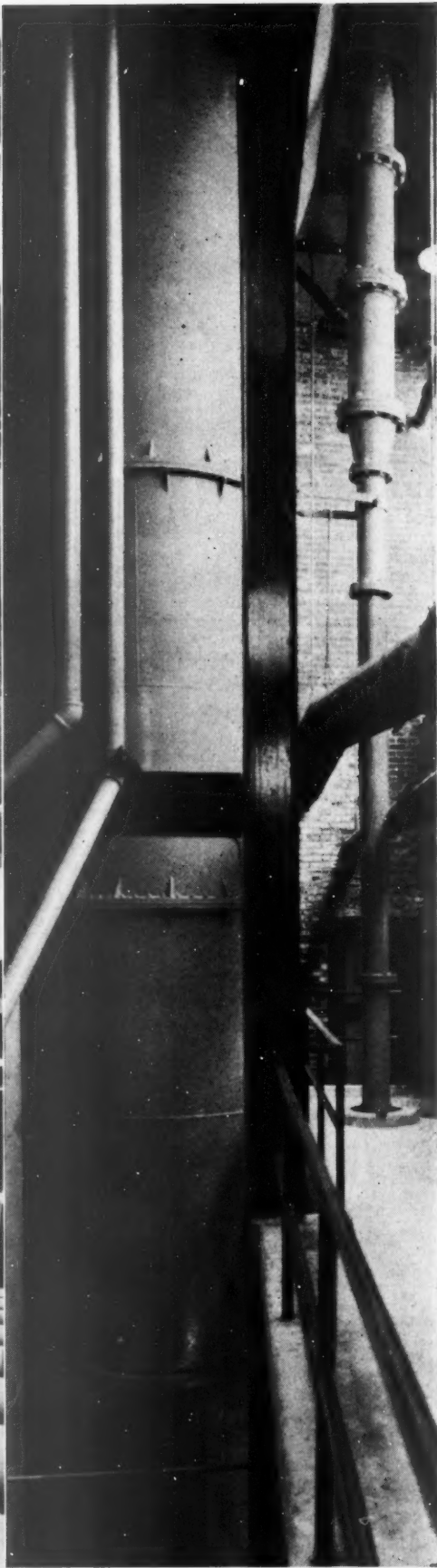
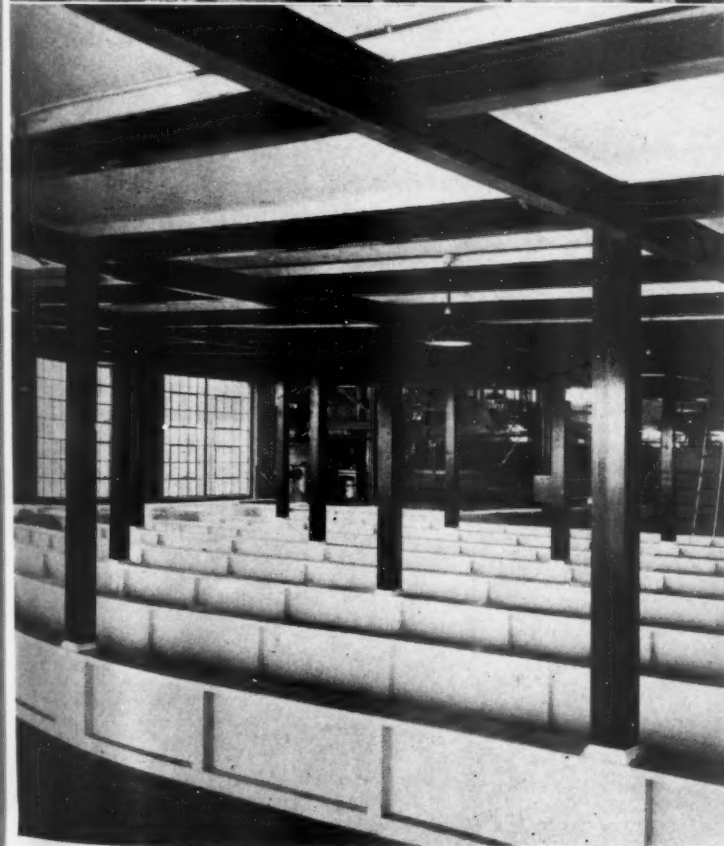
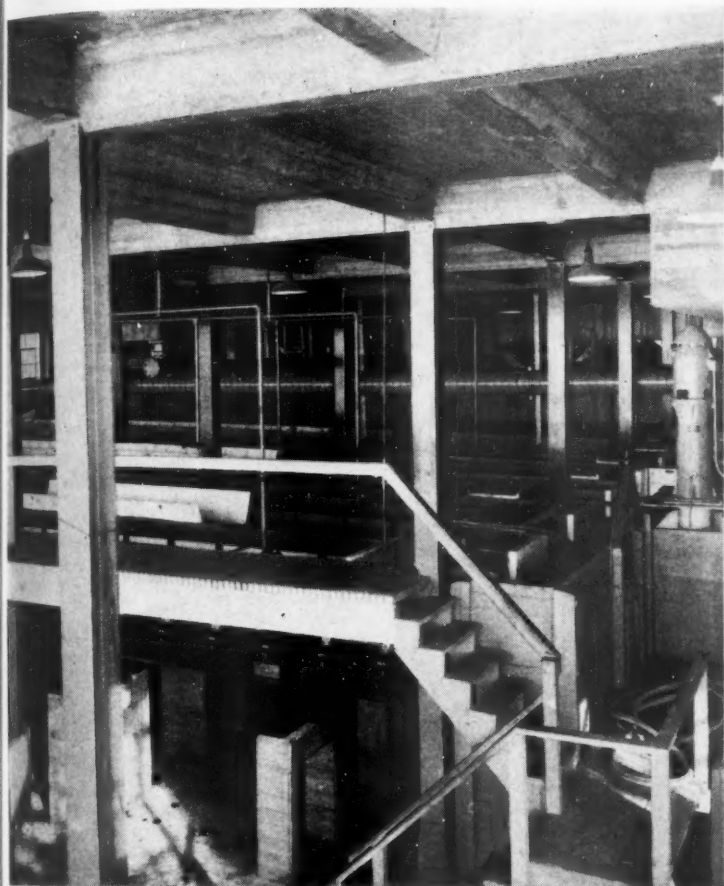
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inside the drying chamber. This disconnecting device is combined with push button control.

With each drying unit there is an economizer for preheating the air required for the dryer. This economizer is built in such a way that it can later on be equipped with apparatus for the heating of water, and can also be combined with an economizer for the ventilation of the machine room.

The two Flakt drying machines are each designed for a capacity of 80 tons of air dry bleached kraft pulp per 24 hours at a maximum steam pressure of 23 pounds gauge in the Flakt dryer. This capacity is guaranteed by the manufacturers for pulp dried 94 per cent bone dry, with a maximum steam consumption of 1.3 pounds of steam per pound of water evaporated.

At present the machines are operating at 85 feet per minute and producing in excess of their rated capacity. The pulp web is entering the drying chamber at 52 per cent air dry and is discharged to the cutters at 98 per cent air dry.

The principal difference in the Flakt method of drying over other methods lies in the fact that the pulp web is never at any time in direct contact with a heated surface. This is said to be the system's chief advantage for it provides a gentle drying of the pulp sheet with very little loss of strength. Steam consumption is low and the dried sheet it is claimed will hydrate in the beater in approximately half the time required for cylinder dried pulp.

## Cutting, Baling

The cutting, conveying and baling system in operation in the St. Regis Kraft Company's Tacoma mill is unique and efficient. It was designed by H. D. Calvin, resident engineer.

The pulp web as it comes from the Flakt dryer is slit longitudinally by circular knife slitters and then cut into 30-inch lengths by a revolving cross cutter. The resulting sheets, 30 by 31½ inches, are transferred by a felt to the layboy. This layboy frame and drive rises automatically with the increasing height of the bales, the sheets being laid

on a stationary conveyor table made up of a large number of small conveyor wheels. When the sheet piles have attained the required height a grid is run out to hold the sheets while the piles are removed from under the layboy by lowering the wheel conveyor table.

The table is automatically lowered on an incline sufficient to transfer the piles of sheet pulp by gravity to a wheel conveyor (See photographs showing conveyors and baling system). This conveyor is made up of two strands of chain driven by a small 1-h.p. reduction gear motor. Between the chains are attached sections of wheel conveyors.

With the piles of pulp on the conveyor they are then conveyed at right angles to the layboy until they align with the gravity rolls. They then move by gravity picking up the bottom wrapper through a slot in the rolls, continuing on to the scales.

Sheets are added or taken off to bring the pile or bale as it will now be called, to an exact 400 pounds weight. The bale, as yet unwrapped, is then pushed down gravity rolls to the 600-ton hydraulic press.

Here it rolls on two steel belts which are carried on two spring mounted rolls (see small photograph). These rolls are spring balanced so as to just support one bale clear of the press platen. The bale is then compressed to the required size, 40 cubic feet per ton, the press released and the bale pulled out of the press onto the roller conveyor into which has been built a turntable.

Two men, one on each side of the conveyor fold the wrappers around the sheet pulp, pass wires through slots in the turntable tying the bale in one direction with a hand wire tying machine. The turntable is then elevated about one inch and the bale turned 90 degrees, and two wires tied in the other direction. Thirteen gauge wire is used to make these four wire ties, two in each direction.

Bale stops are provided on the turntable to spot the bales and to keep the wire spacing uniform. After the tying operation is completed the bale stops are depressed and the bales pushed down the gravity rolls to a point underneath an overhead hoist. The same two baler men lower the hoist which is equipped with a grab. With this the bale is loaded onto

wooden skids, 16 bales to the skid. The skids are then transferred to pulp storage by Elwell-Parker Hi-Lift trucks, which are also used for freight car loading (See the first picture accompanying this article). In storage the skids can be piled three high thereby utilizing maximum space.

## Steam Generating

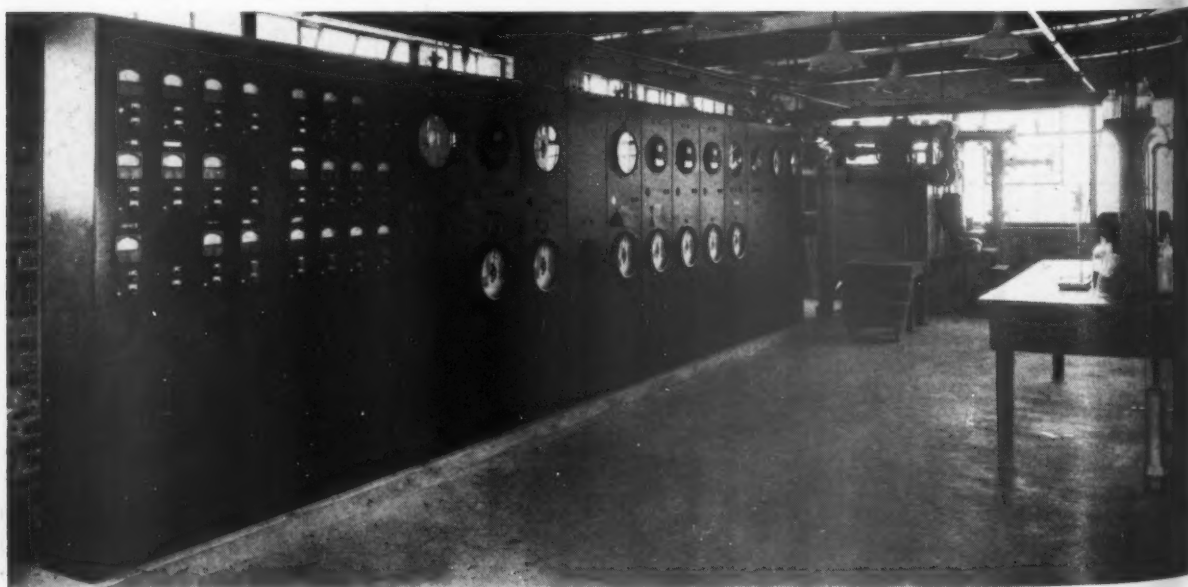
The steam generating plant in the St. Regis Kraft Company's mill consists of six 500-horsepower waste heat boilers and three modern water tube boilers, two of 800 horsepower each and one of 825 horsepower. The two 800 horsepower boilers were part of the original installation but were rebuilt and equipped with water cooled walls and grates to more economically produce steam from 100 per cent hemlock hogged fuel at high ratings.

One new 825-horsepower Babcock and Wilcox Stirling water tube boiler was installed by the C. C. Moore & Co., Engineers, who also had the contract for rebuilding the two older boilers. This new boiler was added to take care of the additional steam requirements of the reconstructed mill.

Normally only hogged fuel is used consisting of all the waste wood from the

THE TWO photographs at the bottom of these two pages represent a panorama view of the new bleach plant operating floor with the instrument control panel at the left, the laboratory table in the center, the chlorination controls just to the right of the center post and the bleached stock washing equipment, part of the Thorne System, on a lower level at the right.

THE TOP picture at the right is of the bleach liquor making apparatus with a stock washer in the background, while the CENTER photograph shows a closeup of the bleach plant laboratory table and the control panel at the right.





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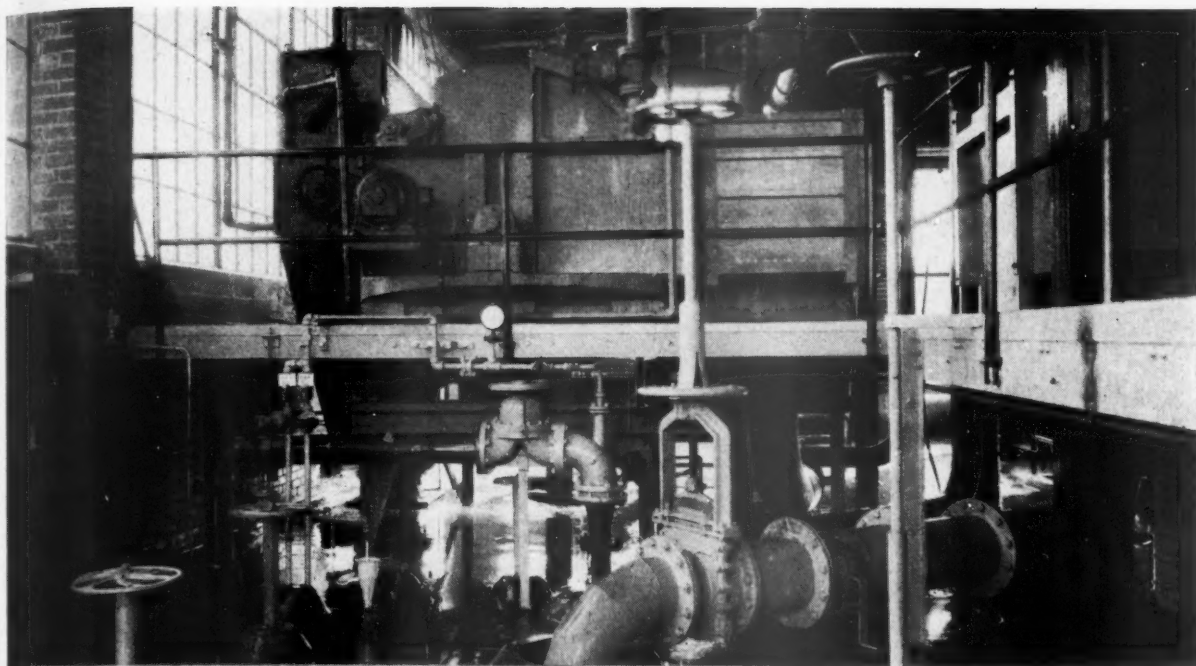
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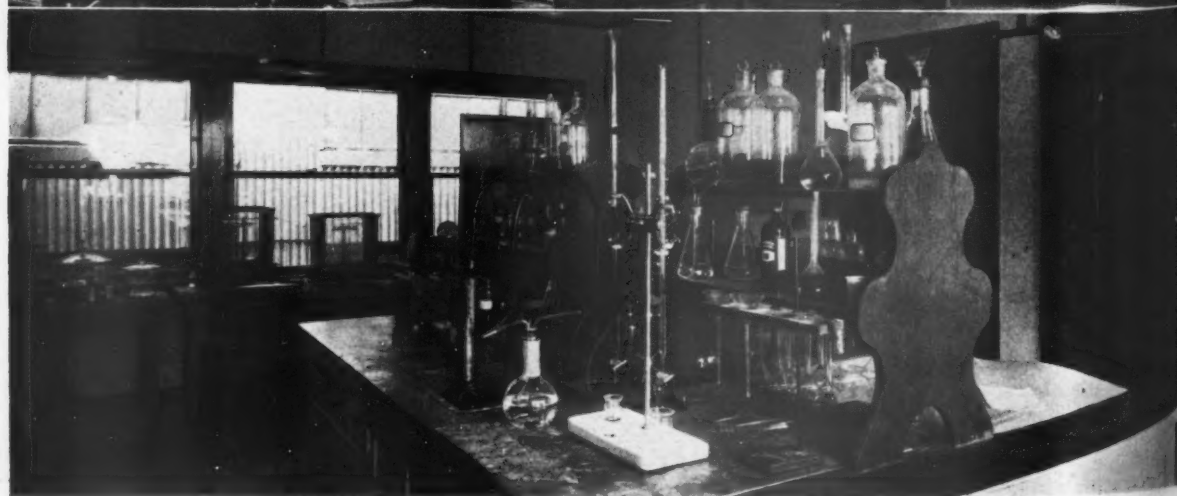
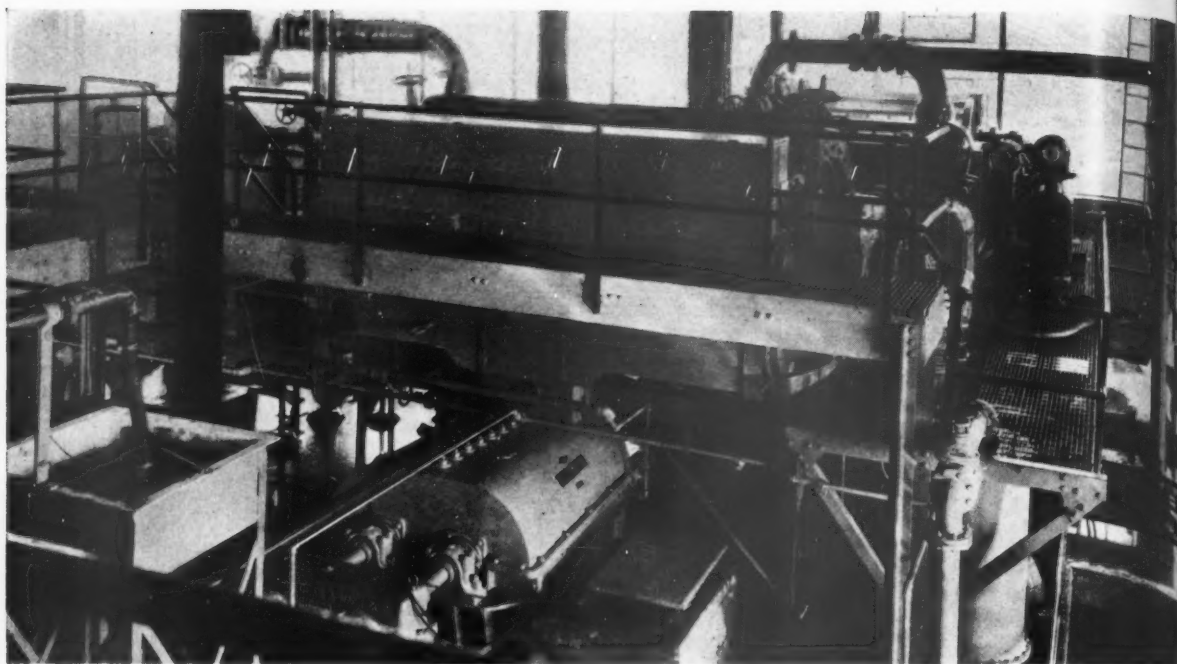
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sawmill and chipping plant together with hemlock and fir hogged fuel purchased from Tacoma sawmills. However, all three boilers are equipped to burn oil should emergencies arise. The hogged fuel storage and conveying system will be described later on in this article. Oil is discharged directly into a large storage tank located alongside the waterway from tankers or barges.

The recovery and causticizing plants are to be enlarged and will be described in a later issue of this journal when the work is completed.

## Pure Water

Although City of Tacoma water is used by the St. Regis Kraft company for all its processes, the ordinary domestic supply was not considered sufficiently dependable to guarantee uniform high quality pulp.

To insure an absolutely pure supply of water at all times a modern pressure filter plant was installed, which was designed by the Shibley Company of Seattle. They also supervised its construction

and the installation of the equipment.

The filter plant consists of eight horizontal rapid sand pressure filters, each nine feet in diameter by thirty-eight feet in length, with a total capacity of 8,000,000 gallons of water per 24 hours.

Equipment has been installed to feed coagulants to the incoming water when necessary due to seasonal variations.

The most modern type of automatic controllers have been provided to regulate the rate of filtering and back washing so that these operations are carried on at the most efficient point. A back wash tank of 25,000 gallons capacity is mounted on a tower forty feet high to provide a reserve supply of clean filtered water for back washing. All valves used in the operation of the filters are hydraulically operated and controls are so arranged that filters can be kept at the maximum efficiency.

## Technical Control

The high quality St. Regis bleach kraft pulp is under full laboratory control at each step in the production process. A completely equipped laboratory is manned by a chief chemist, first and second assistants and eight testers.

In addition there are testers on each shift located at the laboratory on the operating floor of the bleaching plant to control operations there.

The moisture tests on the pulp are carefully and accurately made. All bales of pulp weigh 400 pounds wet weight and a sample is taken from each bale. These samples are saved in air tight cans until 16 bales have been made and the samples collected. The moisture test is then made on the composite sample by

drying the pulp bone dry in a special oven equipped with air circulation. The resulting test and percentage air dry is applied against the skid containing the 16 bales; or 3.2 tons wet weight. A separate test is thus obtained for each 3.2 tons.

The fact that each test is applied against a uniform wet weight of pulp makes for accuracy on all shipments.

Composite samples of pulp are collected for each four-hour period during the day and six complete tests made each day for the following characteristics: Bleachability, Mullen, Tear, Fold, Freeness and Cleanliness. Curves are drawn on the test report for Mullen, Tear, Fold and Freeness.

The standard TAPPI methods are used throughout for testing pulp quality. All raw materials such as lime, salt cake, caustic, etc., are carefully checked by chemical analysis in the laboratory.

Boiler feed water is tested each morning to check the effectiveness of feed water treatments and the conditions in each of the nine boilers in the plant.

Moisture tests are also made on chips and hog fuel.

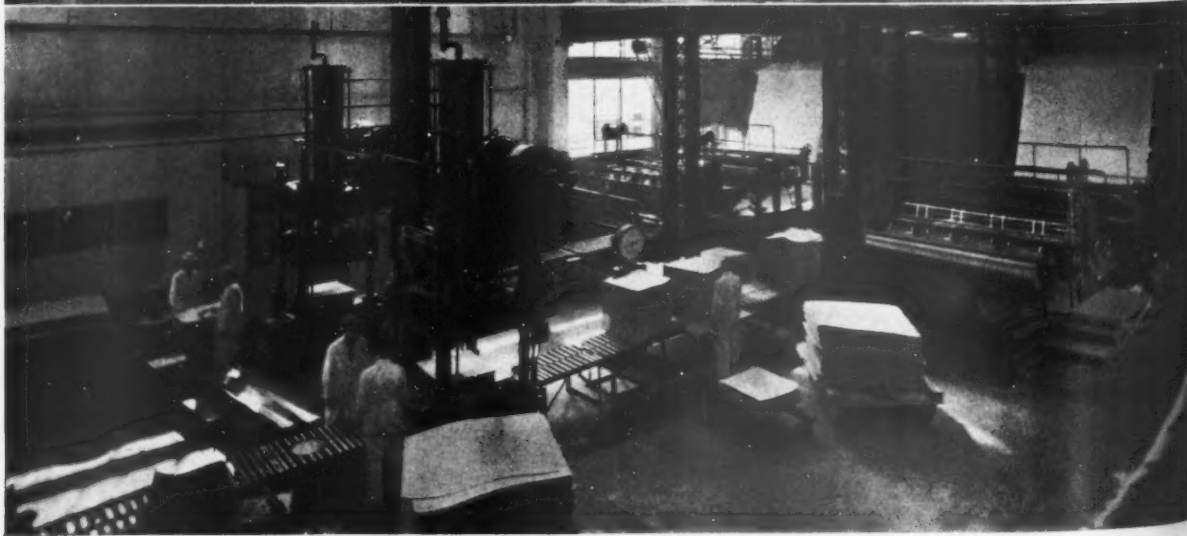
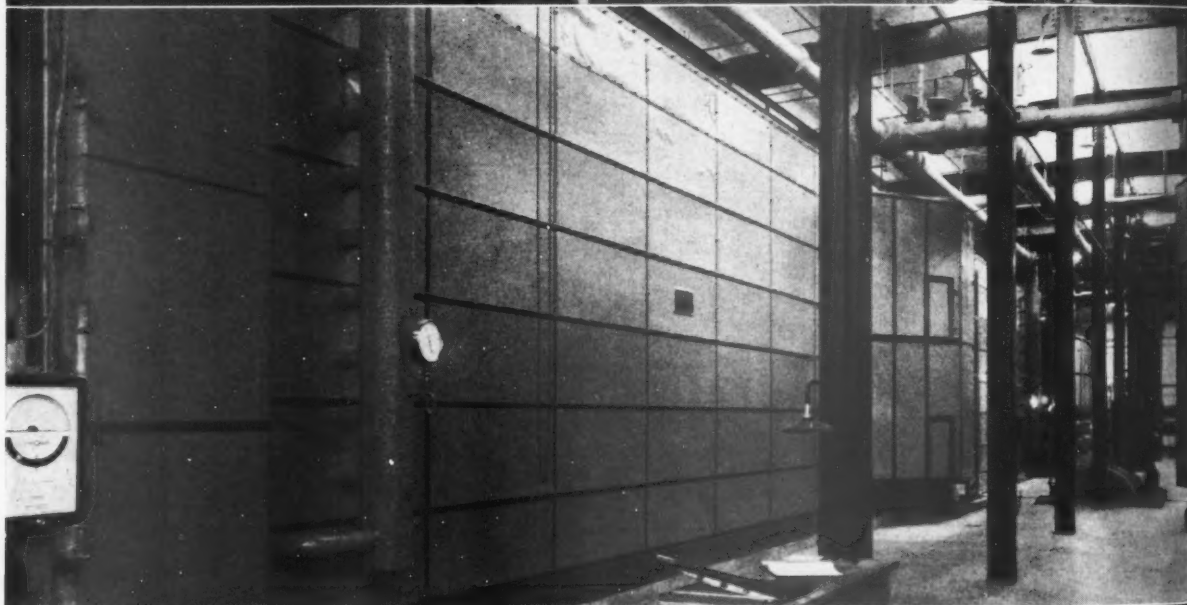
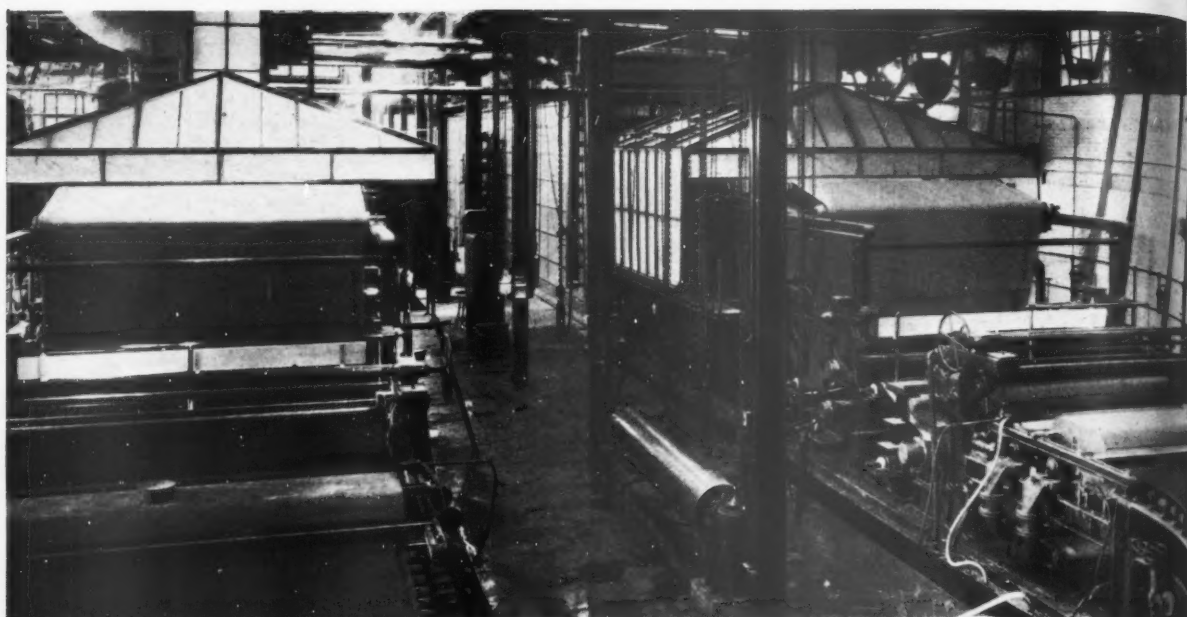
## Material Handling

The location of the various buildings on the site of the St. Regis mill made the conveying of the various bulk materials for the production of pulp and especially the hogged fuel and chips a very interesting one. The space available between buildings is such that the use of belt conveyors in general was advisable. The general arrangement of the essential conveying units in the plant is shown by diagram plan of conveyor system, which was prepared for PACIFIC PULP AND

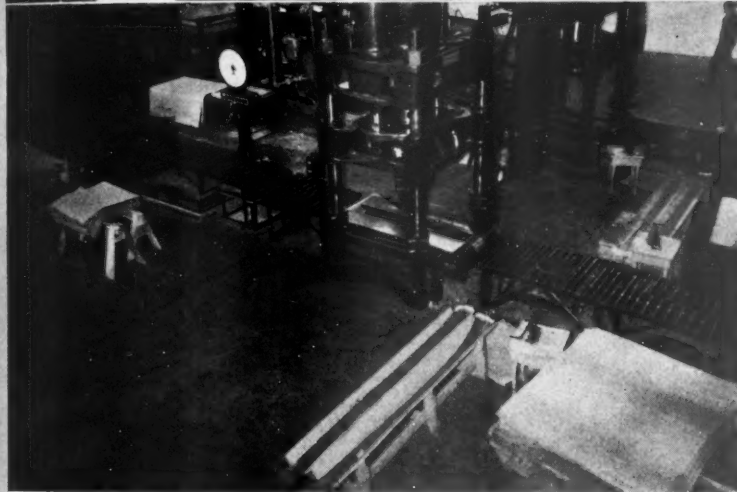
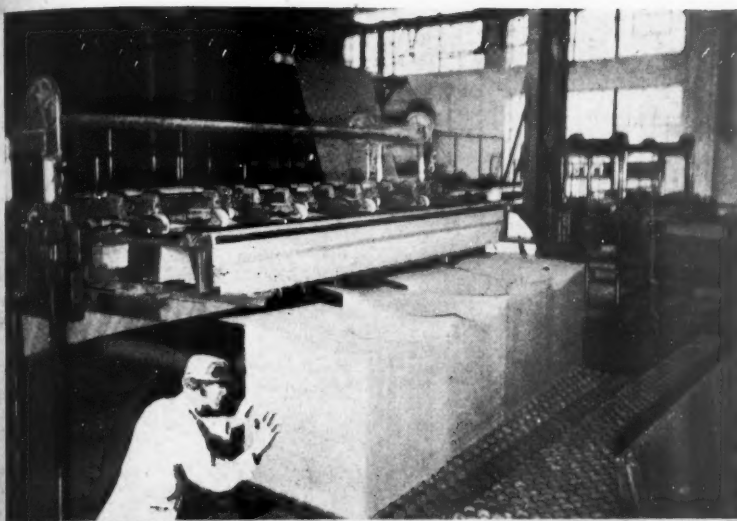
TOP LEFT is a closeup view of the bleached stock washing equipment >>> IN THE CENTER picture the new riffling and screening building shows at the left and the new bleaching plant building in the center >>> In front is the 50-ton bleached stock blending tank equipped with heavy duty agitator >>> AT THE BOTTOM is a view of part of the main mill laboratory which is thoroughly equipped for process control work. BELOW on this page is the new 8,000,000 gallons per day water filter plant.











PAPER INDUSTRY by the Link-Belt Company with the permission of the St. Regis Kraft Company.

### Hogged Fuel for Handling Chips

The hogged fuel handling system is unique in that there are three possible sources of supply for the hogged fuel storage house and boilers.

(1) The waste produced by the plant operation from the breakdown plant or sawmill and screen room.

(2) Hogged fuel can be delivered in railroad cars or trucks and dumped into an underground hopper feeding conveyor to storage bin.

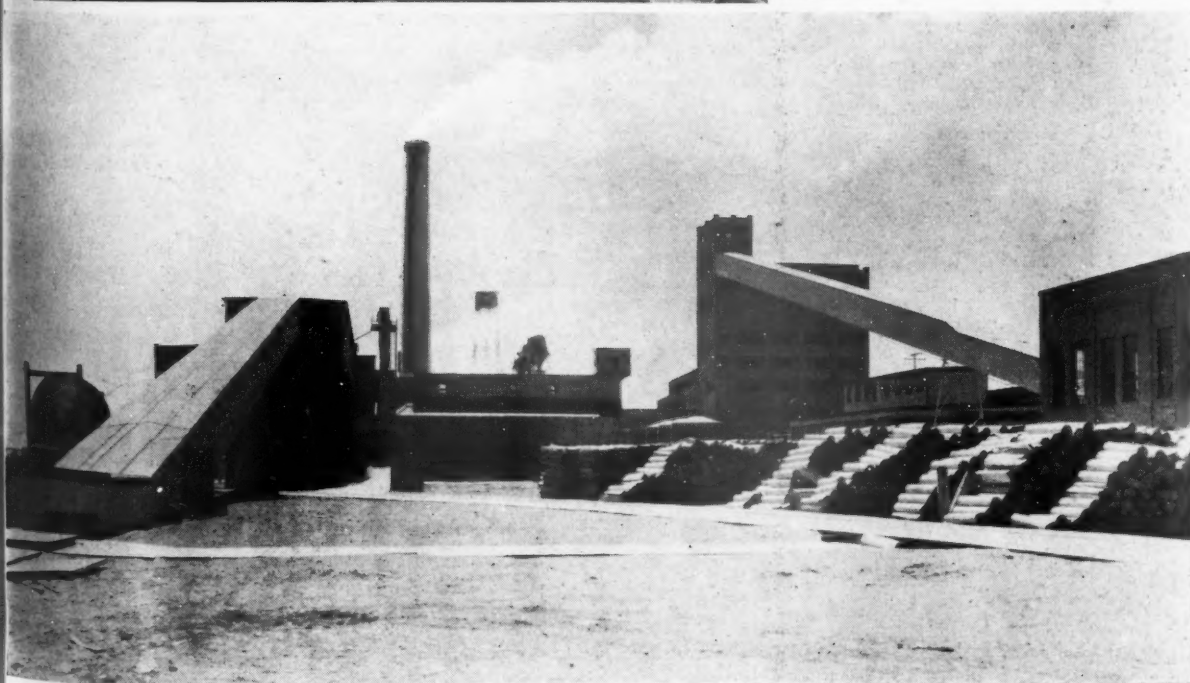
(3) Hogged fuel can be received by scows and handled by fixed hammer head type crane with clam shell bucket and conveyor discharging into the same hopper as the railroad cars.

The waste or hogged fuel produced in the breakdown plant or saw mill is handled in general to and from the hog and various machines by the usual conventional type of sawmill refuse chain conveyors, all of these conveyors carrying the material eventually to one common belt conveyor marked "A" in the

ON THE LEFT HAND PAGE at the top are the two new pulp drying machines, viewed from the wet ends >>> IN THE CENTER is a closeup of one of the two enclosed Flakt dryers >>> BELOW is the finishing end of the two pulp drying machines showing cutting, conveying, pressing and baling operations.

ON THIS PAGE at the top the pulp sheet piles are shown being moved from the cutter on wheel conveyors >>> BELOW is shown the efficient steel belt method of moving the pulp bales through the hydraulic presses.

AT THE BOTTOM the main hogged fuel conveyor shows at the left and the main chip conveyor shows at the right.



# The St. Regis Conveyor System

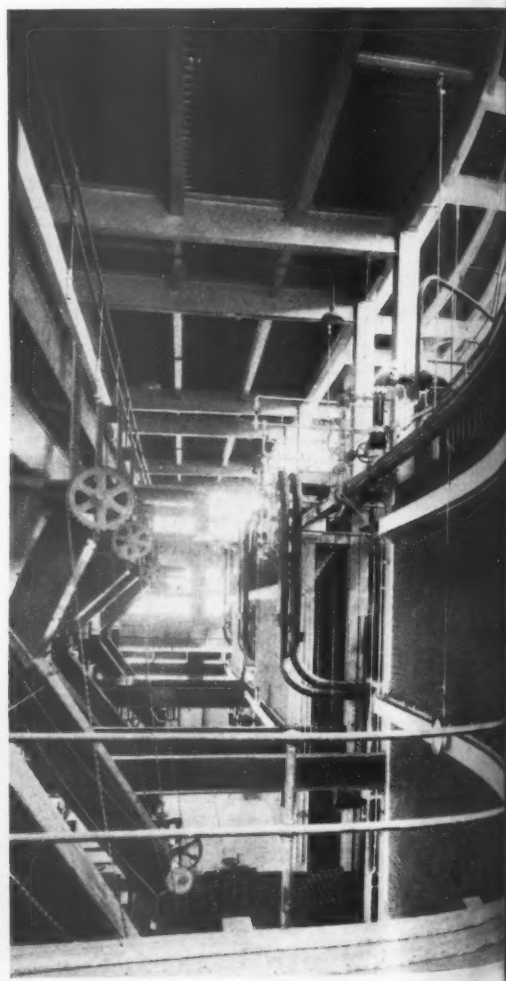
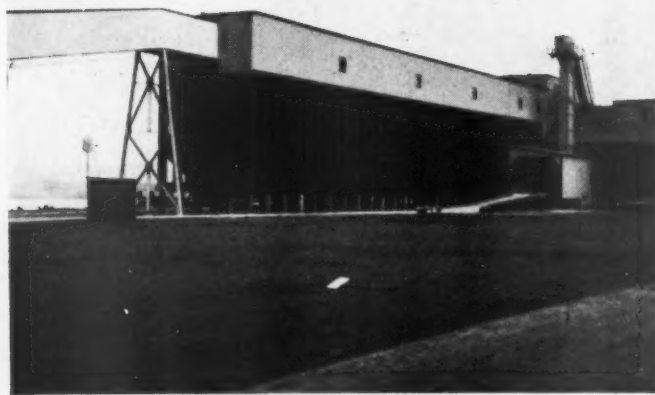
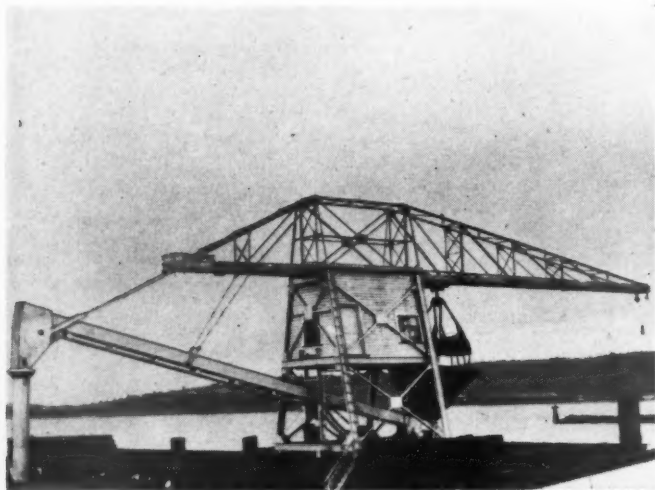
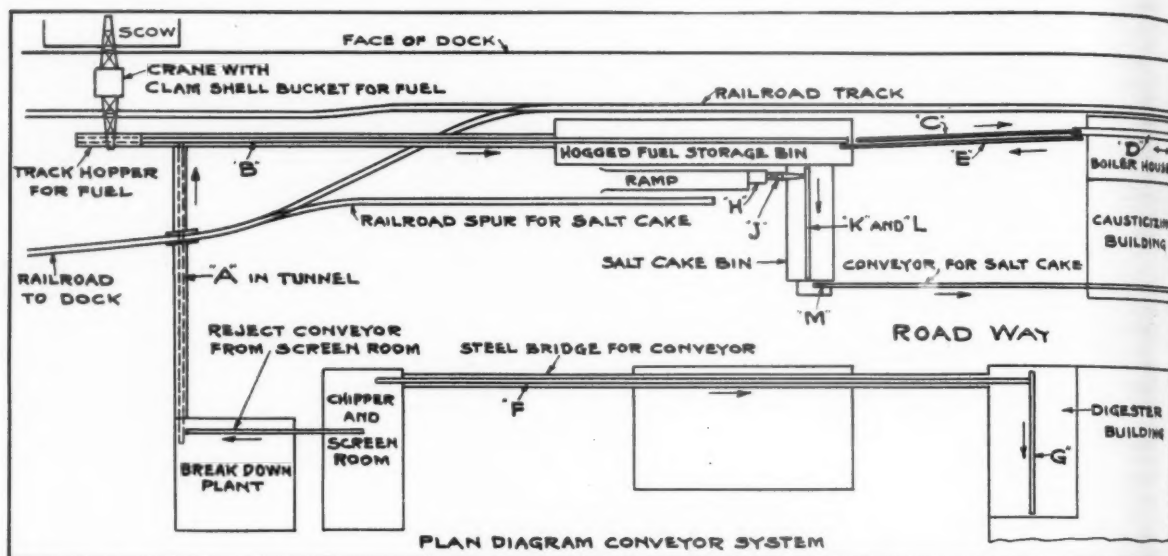


diagram. This same belt conveyor handles the saw dust and oversize material screened out of the chips in the chipping and screen room. To conserve space and to avoid cluttering up the mill yard, this conveyor marked "A" is placed in a concrete tunnel under ground, the top of the tunnel being at ground level.

From the receiving hopper mentioned in the foregoing and conveyor marked "A" a 30-inch wide belt conveyor "B" operates on an incline to the top of the hogged fuel storage bin, this conveyor extending over the entire length of the top of the bin and the fuel can either be discharged into the bin or over the head end of the conveyor to conveyor marked "C." If the material goes over

the head end or discharge end of the conveyor it is immediately carried to the boiler house on a 30-inch belt conveyor marked "C." This conveyor marked "C" also receives fuel from under the storage bin from a double strand of H-480 chain extending the full length of the fuel bin, the fuel being reclaimed by a man raking the fuel into the conveyor.

If sufficient fuel is not being produced by the plant operation or from the sources of supply outside of the plant, additional fuel can be immediately taken from storage on conveyor "C" insuring a uniform supply for boiler requirements. Conveyor marked "C" discharges into conveyor marked "D" which consists of a double strand flight conveyor employing Link-Belt rivetless chain, carrying the fuel into the boiler house and discharging it from the upper run of the conveyor to the various boilers. The fuel is discharged into the boilers through chutes manufactured by Link-Belt, these chutes fitted with counter-weighted swinging gates to prevent excess air from entering the boiler combustion chamber and in the top of each chute is an inspection door of glass so that the fireman can judge his fire at all times.

The excess fuel not discharged to the boilers is carried back on the return run of the double strand flight conveyor marked "E" and is discharged into a 30-inch wide belt conveyor carrying this excess fuel back to the storage house. It can be returned immediately, if desired, by conveyor marked "D" and recirculated through the boiler house. All

conveyors marked "B," "C," "D" and "E" are under control of the operator in the boiler house at all times.

### Chips

All chips in the chipping plant as well as the waste produced in this building from the chip screens are carried on belt conveyors. These belts are of various widths and the finished chips are finally discharged onto an inclined 36-inch wide belt conveyor which carries them to the digester building discharging them onto another belt conveyor from which they are dropped into the digester storage bin. These conveyors are shown by "F" and "G."

Belt conveyors were used for handling of chips to prevent as far as possible any further breakage or degradation of the chips after sizing on the screens. All main belt conveyors for handling the hogged fuel and chips are of the Link-Belt anti-friction roller bearing type, although some of the narrower conveyors are fitted with grease cup type idlers.

### Salt Cake

Salt cake is received at the plant by boat and car. It is loaded into trucks and hauled a short distance where these trucks dump into a receiving hopper "H" fitted with a reciprocating feeder. From this reciprocating feeder salt cake is handled to a large capacity vertical elevator "J" which discharges into a distributing conveyor "K" carrying the salt cake to the storage bin. On this storage

ON THE LEFT is a diagram of the St. Regis conveyor system which is explained in the accompanying article >>> BELOW AT THE LEFT is a closeup of the fixed crane lifting hogged fuel in a clam shell bucket, discharging into a hopper from which it is conveyed to the ground level hogged fuel conveyor which then rises to the top of the hogged fuel storage building shown at the bottom of the page >>> THE OTHER photograph is of the boiler fronts showing the chute discharge for hogged fuel into the boiler fireboxes >>> On the right is the new Stirling boiler.

ON THIS PAGE is shown the new ocean dock with the freighter Kansan loading pulp.





bin another conveyor "L" under the bin carries it to an elevator "M" discharging the cake into the conveyor for use in the plant.

### Pulp Conveyor

Pulp is handled from three thickeners to storage tanks by Link-Belt 16-inch diameter helicoid screw conveyor. This conveyor is driven through a worm gear head type drive and all conveyor hangers are of the resin impregnated type for operating in wet material.

### Other Material Handling

Most of the raw materials as well as finished bales of pulp, are handled on strong wooden skids which are moved and piled by means of automatic lift platform trucks. Soda ash, salt cake, lime, brick, etc., are quickly and easily stored away by this method.

The pulp bales are loaded into cars by means of an Elwell-Parker forked gas-electric car loader, or else taken to the dock for cargo shipment either by the special built gas straddle carrier, on flat cars, or direct on the platform trucks,

quantity and speed being the governing factors in each case.

A gasoline locomotive provides an amply flexible means of inter-plant switching. Equipment has been installed to provide for bulk salt cake delivery from the ocean dock to dump trucks or dump boxes to fit the straddle carrier.

Cord wood is discharged directly into conveyors or onto conveyor tables either from cars or trucks. This conveyor system was designed to provide for multiple intake from several points without congestion.

Fuel oil is received directly into a large storage tank from barges which connect on the Puyallup river dockage area.

Plans are now under way for a double silo system of storage for bulk crushed lime, this method is so designed that handling costs will be reduced to the absolute minimum.

In order to circumvent the necessity of a depressed loading track for pulp cars, a loading platform was built inside the pulp warehouse which has a seven-foot turntable at each end so that the skids of pulp placed thereon may be easily

turned toward the car loader as required (see first photograph).

An ocean dock was constructed, 640 feet long and 80 feet wide, and a deep channel dredged to provide berthing facilities for ocean going freighters.

## In Conclusion

From a reading of the foregoing article and a study of the accompanying photographs it is hoped that the reader will gain a clear conception of the desire on the part of the St. Regis Paper Company to equip the Tacoma plant of its subsidiary, the St. Regis Kraft Company, with the most modern equipment and methods for the production of the highest quality fully bleached kraft pulp from Western hemlock. No effort nor money has been spared to reconstruct the Tacoma mill into a most modern and efficient production unit.

To the members of the St. Regis Kraft Company organization and to the manufacturers of equipment and supplies who contributed so generously of time and data, PACIFIC PULP AND PAPER INDUSTRY offers its sincere thanks.

## Number 11 Digester Going In at Camas

Work has been started at the Camas mill of the Crown Willamette Paper Company for the installation of No. 11 digester, a new 25 ton unit. It will be placed adjacent to No. 10, in space provided in the digester building for such expansion. It will be equipped with an acid circulating system, similar to that used on the other digesters in the plant.

The new digester will increase the pulp supply for Camas paper mill requirements and provide additional production for shipment to the Carthage, N. Y. mill and will be handled on a new Kamyr machine. Production is expected to start some time in August.

At the Lebanon mill a 20-ton sulphate pulp tank is being constructed, to increase pulp storage and to facilitate pulp handling.

The old Camas No. 8 paper machine has been installed at the company's West Linn mill, having been converted for drying pulp. This does away with the presses formerly used for baling the pulp for export.

## Spaulding Reorganization

The reorganization of the Spaulding Pulp & Paper Co., Newberg, Ore., is proceeding satisfactorily, and a concrete plan will soon be submitted to interested parties for approval.

At a recent meeting, in which about 75 per cent of the outstanding bonds were represented, the bondholders appointed a committee of five to deal with the company and the stockholders' committee appointed by preferred and common stockholders.

This committee is composed of Wm. S. Walton of Salem, Fentress Hill, Portland, E. Fred Emery, H. B. Van Duzer and B. T. McBain.

## Fibreboard Work Progressing

The Fibreboard Products, Incorporated of Port Angeles recently razed the large fuel conveyor which linked the old Charles Nelson lumber mill and the Fibreboard company, a landmark of the Port Angeles industrial section for nearly 20 years. The 1500 foot conveyor was built in 1918 to carry the sawmill waste from the Charles Nelson mill, then known as the Puget Sound Mills and Timber Company, to the Crescent mill, which later became the Fibreboard Products plant. R. E. Bundy, resident manager of the mill stated that the conveyor span had become unsafe.

While the destruction program was being carried out work was under way on the expansion of the Fibreboard plant. The Commercial Boiler Works of Seattle installed a new digester which the Stebbins Engineering Company of Seattle is lining. Construction is progressing on the digester building and new blowpit.

Within the mill the company is altering and improving a paper machine and other parts of the production line.

In addition to razing the conveyor Fibreboard also decided to have the old garages of the Nelson mill torn down.

## St. Helens Replacing Digesters

Three of the four digesters at the St. Helens Pulp & Paper Company are being replaced with new Blaw-Knox units, and will be completed some time in July. Each one will hold 3½ tons.

The company is also installing a new bleach tank to improve present bleaching facilities.

Sulphate pulp production at the plant is now 125 tons per day, and 135 tons of sulphate paper.

## Columbia River Digester Nearly Ready

Work is proceeding on the installation of a new 18-ft. by 52-ft. digester at the Vancouver, Wash. plant of the Columbia River Paper Company. The foundation was laid early in May and actual construction of the digester started later in the month. It is expected to go into production some time in July.

This will increase the plant's production by about 25 tons per day, making the total between 110 and 115 tons. It will first be used as an accumulator, for the Chemipulp system relieving one 15-ft. by 50-ft. digester to go on the line in production. This will make four digesters working.

Larger side relief lines will be put on each digester, to make it possible to pre-circulate the liquor and take full advantage of the larger accumulator.

## Soundview Acquires Large Timber Holdings

The Soundview Pulp Company has acquired the large timber holdings of the Lyman Timber Company amounting to more than 600 million feet, as well as the Puget Sound & Baker River railroad previously operated by the Lyman Timber Company. The railroad has been handling about 700 million feet of timber a year.

## White Back On Job

Lewis H. White, vice-president and manager of the California-Oregon Paper Mills, at Los Angeles, has returned from his convalescence following a minor operation, and is hard at work as usual.



# Joint Meeting Draws Large Attendance

**M**ORE than 150 attended the joint meeting of the Pacific Coast Division of the American Pulp and Paper Mill Superintendents Association and the Pacific Section of TAPPI at the Hotel Vancouver, Vancouver, B. C., June 11th and 12th.

Joint Chairmen Ray C. Onkels and Andreas Christensen, together with their committees had arranged an interesting and enjoyable program. Although registration began at noon on Friday no business meeting was scheduled until Saturday morning.

The Friday afternoon golf tournament at the Quilchena Golf Club drew about thirty men despite heavy showers. Others remained at the hotel "making pulp and paper."

In the evening a large crowd attended the jamboree enjoying a varied entertainment program which was followed by dancing. Tom Shields of the Simonds Saw & Steel Company in Seattle, served as master of ceremonies, and by telling his inimitable stories he soon had the crowd entering into the spirit of fun.

## Business Meetings

Saturday morning the meeting listened to three interesting papers, each of which was followed by a period of discussion.

The first paper was presented by Dr. John D. Rue, of the Hooker Electrochemical Company, Niagara Falls, New York, entitled, "Recent Trends in Kraft Bleaching." Dr. Rue's paper is published elsewhere in this number.

"The Trend in Sulphite Pulping," by Andreas Christensen of the British Columbia Pulp and Paper Company, Limited, outlined the progress made in the sulphite industry during the past decade. Mr. Christensen's paper also appears in this issue.

The third paper was offered by W. S. Kirkpatrick, assistant superintendent of

the Consolidated Mining & Smelting Company, Limited, of Trail, B. C. Mr. Kirkpatrick's paper was titled "Recovery of Sulphur From Waste Smelter Gases," and dealt with the processes developed at Trail to reclaim sulphur from the stack gases. Mr. Kirkpatrick's paper brought forth many questions.

Ray C. Onkels, chairman of the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association and superintendent of the Westminster Paper Company, Limited, served as chairman of the morning business meeting.

## New TAPPI Officers

Following the presentation of the papers and the discussion the members of the Pacific Section of TAPPI held a business meeting to elect new officers. In view of the vote by the Pacific Section at the Portland meeting last November to hold but one two-day meeting a year, it was decided to elect new officers at this time as the remainder of TAPPI's 1937 program will consist of dinner meetings only.

Chairman Fahlstrom read the report of the nominating committee, W. Norman Kelly, chairman; Dr. E. C. Lathrop and H. A. Des Marais, which was adopted unanimously.

George H. McGregor, vice-chairman in charge of programs was elevated to the chairmanship. Mr. McGregor is technical director of the Longview mill, Pulp Division, Weyerhaeuser Timber Company.

N. W. Coster was elected vice-chairman. He will have charge of the dinner meeting programs this Fall and Winter and the program for the two-day meeting next year. Mr. Coster is technical director for the Soundview Pulp Company in Everett.

J. V. B. Cox was elected secretary-treasurer to succeed Earl G. Thompson who has served in the office for two terms. Mr. Cox is plant superintendent of the Paper Makers Chemical Division of the Hercules Power Company, with headquarters in Portland, Oregon.

Carl Fahlstrom, the retiring chairman, automatically becomes a member of the executive committee. W. R. Barber, who was chairman in the 1935-1936 term, was elected the other member of the executive committee to succeed Andreas Christensen who served this past year. The new officers assumed their duties immediately following the convention in Vancouver.

A vote of appreciation for their excellent work was given to the three retiring officers, Carl Fahlstrom, chairman; Earl G. Thompson, secretary-treasurer; and Andreas Christensen, member of the executive committee.

Mr. Fahlstrom expressed his appreciation to the other officers who served with him and to the members and friends of TAPPI for their support during his term. He said that the Pacific Section of TAPPI was making steady progress in its work to bring the men of the industry together and to present interesting and instructive programs.

The new chairman of the Pacific Section of TAPPI, George H. McGregor, after conferring with the new vice-chairman N. W. Coster, announced that the TAPPI dinner program for the coming Fall and Winter will be enlarged to include talks on cost accounting, labor relations, social security legislation and similar subjects allied with the operation of pulp and paper mills, in addition to the regular technical subjects.

He asked for the same cooperation



**GEORGE H. MCGREGOR**  
Elected Chairman  
of TAPPI



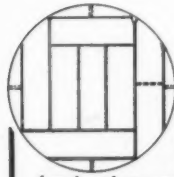
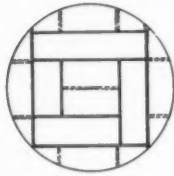
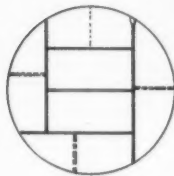
**N. W. COSTER**  
Elected Vice-Chairman  
of TAPPI



**J. V. B. COX**  
Elected Secretary-Treasurer  
of TAPPI

## The STETSON-ROSS WAY

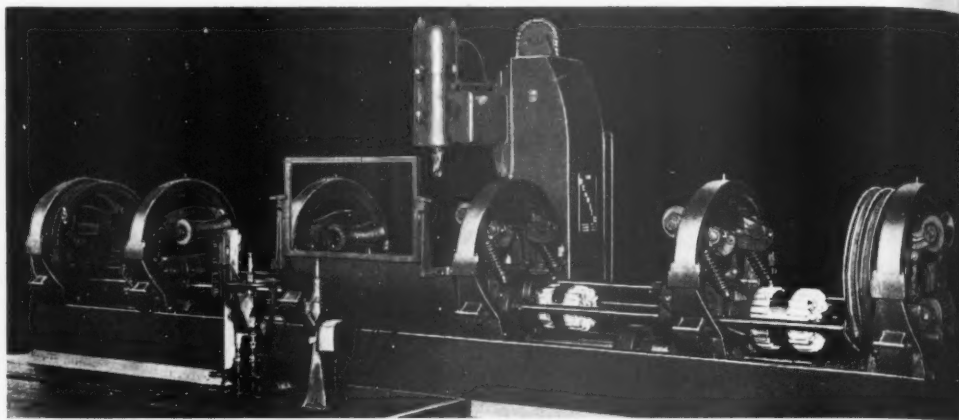
is to Bark and  
Brout Larger,  
Longer Pieces  
of Pulpwood—



PULP MEN of the Pacific Northwest know large logs must be cut into cants, similar to above suggestions, if ingrown bark, knots and rot are to be found and removed. \* \* \* They also know the advantages gained by cutting cants in longer lengths (10 to 20 feet):

- 1—For economy in handling.
- 2—For saving of wood by eliminating unnecessary saw kerf.
- 3—For the proper chipping of a larger percentage of each piece.

# RAYON PULPWOOD



The first step is to saw logs into cants, exposing the defects.

The second step is to quickly and completely remove bark from cants.

The third step is to speedily "brout" all black knots, rot and other imperfections.

The Stetson-Ross "Brouter" (Trade Mark)\* affords the very latest and most efficient method of pulpwood cleaning. A 45-H.P. motor operating at 10,000 R.P.M. drives a special High Speed Steel Bit that quickly bores out knots and routes out defects running lengthwise, crosswise, or any angle or circle. The turning and feeding table has been developed primarily to enable the cutting out of ingrown seams and black knots, regardless of their position in the cant. (Patents applied for).

## STETSON-ROSS Barkers and Brouters Modernize Breakdown Woodrooms for Sulphite Pulp Plants.

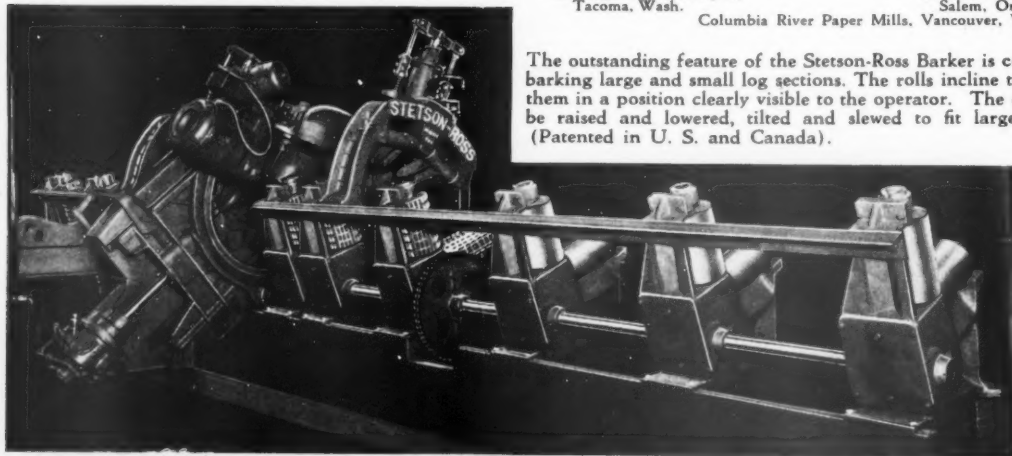
To obtain clean chips, for rayon pulpwood, it is first necessary to cut logs into cants or log sections, exposing the black knots, ingrown bark, rot and other defects. The Stetson-Ross Ring-Type Barkers and Brouters (Trade Mark) have been developed especially to remove all of these defects.

### USERS OF STETSON-ROSS WOOD CLEANING MACHINES:

Rainier Pulp & Paper Company  
Shelton, Wash.  
Grays Harbor Pulp & Paper Company  
Hoquiam, Wash.  
Weyerhaeuser Timber Company  
Longview, Wash.  
Soundview Pulp Company  
Everett, Wash.  
National Paper Products Company  
Port Townsend, Wash.  
St. Regis Kraft Company  
Tacoma, Wash.

Weyerhaeuser Timber Company  
Everett, Wash.  
Olympic Forest Products Company  
Port Angeles, Wash.  
Puget Sound Pulp & Timber Co.  
Bellingham, Wash.  
Morrison Mill Co. (P. S. P. & T. Co.)  
Anacortes, Wash.  
British Columbia Pulp & Paper Co.  
Wood Fibre, B. C.  
Oregon Pulp & Paper Company  
Salem, Ore.

Columbia River Paper Mills, Vancouver, Wash.



The outstanding feature of the Stetson-Ross Barker is complete adjustability for barking large and small log sections. The rolls incline to receive cants and feed them in a position clearly visible to the operator. The concave cutter head may be raised and lowered, tilted and slewed to fit large or small log sections. (Patented in U. S. and Canada).

The time to remove defects is before wood is chipped and the defects spread into small particles.

★ We welcome inquiries about these machines and any other equipment that we manufacture. Individual requirements studied and needed machinery developed. Write Stetson-Ross Machine Co., Seattle, Wash. U. S. A., or phone (Seattle, MAin 4188).

# STETSON-ROSS

\*This Trade Mark "Brouter" was coined by Stetson-Ross to combine "Boring" and "Routing."



**RAY C. ONKELS**  
Co-Chairman of Convention

from the members as has been accorded his predecessor Carl Fahlstrom.

### Saturday Luncheons

At the stag luncheon Saturday Andreas Christensen served as chairman. Earl G. Thompson paid a tribute to Kenneth Shibley, active and popular member of TAPPI, who died May 1st, and the gathering stood in silence in tribute to Mr. Shibley's memory.

The Westinghouse Electric & Mfg. Company presented a sound picture, "News in the Making," or "The Story of Micarta." This proved both interesting and informative.

The ladies were entertained at luncheon in the Hudson Bay Company's tea room. Each were presented with a teacup and saucer with the compliments of McLennan, McFeely and Prior, Limited, of Vancouver.

### Round Table Discussion

Saturday afternoon the always interesting Superintendents' round table discussion brought out a large number of men. Under the leadership of Carl Fahlstrom and Ray Onkels questions submitted in advance were brought up for discussion.

The discussion was spirited and covered a number of subjects dealing with the production of pulp and paper. Late in the afternoon the discussion ended with the comment heard generally that it was an exceptionally good one, productive of a number of useful ideas.



**CARL FAHLSTROM**  
Retiring TAPPI Chairman

### The Banquet

The banquet got off to a friendly start with group singing led by F. F. Foote of the Westminster Paper Company, who pitted each table against the others, awarding a prize to the best singing group.

As toastmaster R. Bell-Irving, general manager of the Powell River Company pleased the crowd. He introduced the Honorable A. Wells-Gray, Minister of Lands for the Province of British Columbia, who gave a short interesting talk emphasizing the value of the pulp and paper industry to the entire Pacific Coast. He remarked about the fine spirit of friendliness and cooperation existing between the industry in British Columbia and in the Pacific Coast states.

### Golf Prizes

A large number of Vancouver business firms contributed the many fine golf prizes and Fred Shaneman awarded them to the winners of the Friday afternoon tournament.

A silver vase was awarded to J. F. Smith for the low net score; a golf bag to Jack Fraser for the low gross; another golf bag to Lawrence Killam for the low score on the hidden hole. Don Shirley won a box of golf balls for the second low on the hidden hole.

J. Dryborough won a box of golf balls for driving closest to the pin on the short hole. For low score on another hidden hole F. F. Foote won a jacket. The longest drive, 227 yards, won W. R. Baumann



**ANDREAS CHRISTENSEN**  
Retiring Executive Committee  
Member, Co-Chairman of  
Convention

a sweater, and the second longest drive, 217 yards won a jacket for Lawrence K. Smith.

The high point in Mr. Shaneman's awarding of the prize came when he presented George H. McGregor with a large totem pole for the highest score on a single hole. The number of strokes Mr. McGregor employed to get the ball into the hole were not divulged.

### Those Who Made the Meeting a Success

Back of this successful joint meeting of the two Pacific Coast associations is a large amount of hard work by the joint chairmen, Ray C. Onkels and Andreas Christensen and their committees.

Working with them were T. J. Sharland as treasurer; G. D. Humphrey, in charge of registration; Victor M. Warren, in charge of transportation. F. F. Foote served as chairman of the entertainment committee and was assisted by C. T. Radcliffe and Albert E. Baker.

Hunter W. Wells and W. E. Smith made arrangements for the golf tournament.

There were many ladies in attendance at the convention and they found an enjoyable program arranged which included the luncheon on Saturday followed by a sightseeing drive, which took them to a number of the famed beautiful gardens of Vancouver.



The Stag Luncheon at the Joint Vancouver, B. C., Meeting of the Pacific Coast Superintendents and TAPPI Organizations.

# THORNE PATENT BLEACHING SYSTEMS



The Ultimate in  
Bleaching Process  
and Equipment

Specifically  
Designed in Every  
Case to Suit  
Individual Mill  
and Pulp Requirements



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**EARL G. THOMPSON**  
Retiring TAPPI Secretary-  
Treasurer

Responsible for the enjoyable time had by the visiting ladies were Mrs. R. C. Onkels and Mrs. Andreas Christensen, who were jointly in charge. They were assisted by Mrs. C. T. Radcliffe, Mrs. E. M. Herb, Mrs. F. F. Foote and Mrs. T. J. Sharland.

Those who registered at the Vancouver convention follow:

Mr. and Mrs. Lawrence Killam, Mr. and Mrs. A. E. Baker, Mr. and Mrs. Andreas Christensen, Mr. and Mrs. G. D. Humphrey, Mr. and Mrs. T. J. Sharland, Mr. Evan Whitehead, Mr. O. A. Jorgenson, Mr. Victor Warren and Mr. Tom Wright of the British Columbia Pulp and Paper Company, Ltd., Vancouver, B. C.

Mr. C. H. E. Williams, C. H. E. Williams Co., Ltd., Vancouver, B. C.; Mr. and Mrs. John D. Rue, Hooker Electrochemical Co., Niagara Falls, N. Y.; Mr. and Mrs. M. W. Thorn, Sydney Roofing and Paper Co., Ltd., Victoria, B. C.; Mr. H. A. Vernet, A. E. Staley Mfg. Co., San Francisco.

Mr. Harold S. Muckelt, B. C. Equipment Co., Ltd., Vancouver, B. C.; Mr. William R. Willes, Titanium Pigment Corp., New York City; Mr. and Mrs. R. E. Chase, R. E. Chase & Co., Tacoma, Wash.; Mr. and Mrs. A. S. Viger, Rainier Pulp & Paper Co., Shelton, Wash.; Mr. Albert H. Hooker, Hooker Electrochemical Co., Tacoma, Wash.; Mr. and Mrs. George W. Houk, Hooker Electrochemical Co., Tacoma, Wash.

Mr. and Mrs. J. E. Hassler, Coast Mfg. and Sales Co., Portland, Ore.; Mr. and Mrs. R. S. Carey, National Aniline & Chemical Co., Portland, Ore.; Mr. Frank D. Wilson, Simonds Canada Saw Co., Ltd., Vancouver, B. C.; Mr. and Mrs. G. H. McGregor, Pulp Division, Weyerhaeuser Timber Co., Longview, Wash.; Mr. and Mrs. W. P. Ferguson, Peacock Bros., Ltd., Vancouver, B. C.

Mr. J. A. Poget, Peacock Bros., Ltd., Vancouver, B. C.; Mr. and Mrs. Irving R. Gard,

Merrick Scale Mfg. Co., Seattle, Wash.; Mr. Walter R. Baumann, Pennsylvania Salt Mfg. Co. of Washington, Tacoma, Wash.; Mr. Fred Shaneman, Pennsylvania Salt Mfg. Co. of Washington, Tacoma, Wash.; Mr. and Mrs. C. P. Kelly, Pacific Mills, Ltd., Ocean Falls, B. C.; Mr. T. M. Shields, Simonds Saw & Steel Co., Seattle, Wash.

Mr. A. C. Dunham, Lockport Felt Co., Portland, Ore.; Mr. L. C. Kelley, British Columbia Pulp & Paper Co., Woodfibre, B. C.; Mr. S. H. Rudkin, British Columbia Pulp & Paper Co., Woodfibre, B. C.; Mr. Z. A. Wise, Griffith Rubber Mills, Portland, Ore.; Mr. and Mrs. Earl S. Thompson, Great Western Electro-Chemical Co., Seattle, Wash.; Mr. J. F. Smith, Great Western Electro-Chemical Co., San Francisco, Calif.

Mr. J. D. Fraser, Standard Oil Co. of British Columbia, Vancouver, B. C.; Mr. E. S. Duval, Columbia Steel Co., San Francisco, Calif.; Mr. N. L. Peck, Columbia Steel Co., Portland, Ore.; Mr. R. S. Nicolls, Columbia Steel Co., Seattle, Wash.; Mr. and Mrs. C. J. McAllister, Coast Mfg. & Sales Co., Portland, Ore.; Mr. T. A. Graham, Columbia Steel Co., San Francisco, Calif.

Mr. Howard C. Graham, Washington Pulp & Paper Co., Division of Crown Zellerbach Corp., Port Angeles, Wash.; Mr. Edward A. Heiss, Wallace & Tiernan Co., Seattle, Wash.; Mr. W. R. Payne, British Columbia Pulp & Paper Co., Ltd., Woodfibre, B. C.; Mr. Lawrence K. Smith, Pacific Pulp & Paper Industry, Seattle, Wash.; Mr. R. S. Parry, Chess Bros., Ltd., Vancouver, B. C.; Mr. J. Iversen, Port Mellon Operating Co., Port Mellon, B. C.

Mr. and Mrs. A. C. R. Yuill, Dominion Engineering Co., Ltd., Vancouver, B. C.; Mr. and Mrs. R. C. Onkels, Westminster Paper Co., Ltd., New Westminster, B. C.; Mr. and Mrs. R. T. Petrie, Bagley & Sewall Co., Portland, Ore.; Mr. Fred R. Riley, Powell River Co., Ltd., Powell River, B. C.; Mr. C. H. Caruthers, Powell River Co., Ltd., Powell River, B. C.; Mr. and Mrs. J. B. Thompson, Canadian General Electric Co., Ltd., Vancouver, B. C.

Mr. and Mrs. A. F. Frathering, Canadian General Electric Co., Ltd., Vancouver, B. C.; Mr. and Mrs. L. G. Harris, Pacific Mills, Ltd., Ocean Falls, B. C.; Mr. D. L. Shirley, Link Belt Company, Portland, Ore.; Mr. F. B. Wetherill, Link Belt Co., Ltd., Vancouver, B. C.; Mr. H. M. Jones, Ohio Knife Co., Seattle, Wash.; Mr. and Mrs. P. J. Onkels, Pacific Coast Paper Mills, Bellingham, Wash.

Mr. and Mrs. Walter S. Hodges, Astin Hill Mfg. Co., Portland, Ore.; Mr. and Mrs. Leon ard McMaster, Astin Hill Mfg. Co., Philadelphia, Pa.; Mr. John S. Loomis, Heller & Merz Corp., New York City; Mr. and Mrs. Wm. C. Marshall, Heller & Merz Corp., Portland, Ore.; Mr. and Mrs. R. Foote, Westminster Paper Co., Ltd., New Westminster, B. C.

Mr. and Mrs. N. A. Lewthwaite, National Paper Products Co., Division Crown Zellerbach Corp., Port Townsend, Wash.; Mr. and Mrs. Harlan Scott, Pacific Pulp & Paper Industry, Seattle, Wash.; Mr. and Mrs. J. W. Peckham, The Bristol Co., Seattle, Wash.; Mr. and Mrs. Wm. R. Gibson, Shibley Co., Seattle, Wash.; Mr. A. E. Youngchild, Soundview Pulp Co., Everett, Wash.; Mr. and Mrs. Jerome Janek, Inland Empire Paper Co., Millwood, Wash.

Miss Florence Skitch, Mr. C. C. Macdonell, British Columbia Pulp & Paper Co., Ltd., Woodfibre, B. C.; Mr. Gerald Alcorn, Pulp Division, Weyerhaeuser Timber Co., Everett, Wash.; Mr. Lee Hill, Pulp Division, Weyerhaeuser Timber Co., Everett, Wash.; Mr. Roy Shuji, Vancouver Paper Box Co., Ltd., Vancouver, B. C.

Mr. and Mrs. C. D. Parker, Fafnir Bearing Co., Seattle, Wash.; Mr. and Mrs. Lester T. Graham, Link Belt Co., Seattle, Wash.; Mr. Paul F. Lueth, Sumner Iron Works, Everett, Wash.; Mr. T. B. Horn, Corn Products Sales Co., Portland, Ore.; Mr. and Mrs. C. H. Bevin, Chromium Corp. of America, Portland,

Ore.; Mr. and Mrs. A. Zimmerman, Pacific Straw Paper & Board Co., Longview, Wash.

Mr. W. L. Beuschlein, University of Washington, Seattle, Wash.; Dr. K. A. Kobe, University of Washington, Seattle, Wash.; Mr. Ray Smythe, Rice Barton & Fales Co., Portland, Ore.; Mr. George G. Guild, Huntington Rubber Mills, Seattle, Wash.; Mr. and Mrs. A. H. Lundberg, G. D. Jensen Co., Seattle.

Mr. J. V. B. Cox, Paper Makers Chemical Division, Hercules Powder Co., Portland, Ore.; Mr. A. M. Mears, Pacific Coast Supply Co., Portland, Ore.; Mr. Dan Charles, Knox Woolen Co., Seattle, Wash.; Mr. and Mrs. H. D. Cavin, St. Regis Kraft Co., Tacoma, Wash.; Mr. Jack Martin, Schorn Paint Mfg. Co., Seattle, Wash.; Mr. M. Sykes, Portland, Ore.; Mr. L. Toredson, Portland, Ore.

Mr. and Mrs. W. M. Osborn, Hooker Electrochemical Co., Portland, Ore.; Mr. and Mrs. Berk Bannan, Western Gear Works, Seattle, Wash.; Mr. and Mrs. E. Ekholm, Puget Sound Pulp & Timber Co., Bellingham, Wash.; Mr. and Mrs. W. A. Salmonson, Coast Mfg. & Sales Co., Seattle, Wash.

Mr. R. E. Drane, St. Helens Pulp & Paper Co., St. Helens, Ore.; Mr. G. H. Tiernan, Vancouver, B. C.; Mr. and Mrs. A. S. Quinn, Stebbins Engineering Co., Seattle, Wash.; Mr. and Mrs. Carl Fahlstrom, Longview Fibre Co., Longview, Wash.; Mr. Martin Breuer, Dyestuffs Division, E. I. Du Pont de Nemours & Co., San Francisco, Calif.; Mr. A. B. Hunter, McLennan, McFeely & Prior, Ltd., Vancouver, B. C.; Mr. and Mrs. C. T. Radcliffe, Westminster Paper Co., New Westminster, B. C.; Mr. R. A. Bremner, Electric Steel Foundry Co., Portland, Ore.; Mr. H. Richmond, Electric Steel Foundry Co., Portland, Ore.; Mr. Jack Hutchinson, B. C. Plumbing Co., Ltd., Vancouver, B. C.; Mr. F. Fields, Bank of Nova Scotia, Vancouver, B. C.

Mr. S. M. Bowen, McLennan, McFeely & Prior, Ltd., Vancouver, B. C.; Mr. Frank Hedley, Canadian Westinghouse Co., Ltd., Vancouver, B. C.; Mr. Jack Priestman, Vancouver, B. C.; Mr. G. W. Vennells, Railway and Power Engineering Corp., Ltd., Vancouver, B. C.; Mr. G. A. Donnelly, Railway and Power Engineering Corp., Ltd., Vancouver, B. C.; Mr. R. C. Hardy, Canadian General Electric Co., Ltd., Vancouver, B. C.

Mr. R. S. MacPherson, Northern Metals & Engineering, Ltd., Vancouver, B. C.; Mr. and Mrs. D. C. Morria, James Brinkley Co., Seattle, Wash.; Mr. and Mrs. Brian Shera, Pennsylvania Salt Mfg. Co. of Washington, Tacoma, Wash.; Mr. G. F. Mitchell, Hesse-Ersted Iron Works, Portland, Ore.; Mr. and Mrs. Ralph Chatham, Seattle, Wash.; Mr. Kenneth B. Hall, Improved Paper Machinery Co., Portland, Ore.

Mr. and Mrs. Niles Anderson, St. Regis Kraft Co., Tacoma, Wash.; Mr. John Bradley, Powell River Co., Ltd., Powell River, B. C.; Mr. Logan Mayhew, Sydney Roofing and Paper Co., Ltd., Victoria, B. C.; Mr. Ferdinand Schmitz, Jr., Pacific Car & Foundry Co., Seattle, Wash.; Mr. and Mrs. Sidney M. Collier, Soundview Pulp Co., Everett, Wash.; Mr. G. M. Warren, Consolidated Mining & Smelting Co., Ltd., Vancouver, B. C.

Mr. I. H. Andrews, Powell River Co., Ltd., Powell River, B. C.; Mr. B. L. Kerns, Westinghouse Electric & Mfg. Co., Seattle, Wash.; Mr. B. G. Cross, Orr, Ingersoll Rand, Ltd., Vancouver, B. C.; Mr. B. W. Sawyer, Foxboro Co., Portland, Ore.; Mr. Don H. Guild, Huntington Rubber Mills, Seattle, Wash.; Mr. P. Sandwell, Consulting Engineer, Vancouver, B. C.

Mr. E. O. Ericsson, Puget Sound Pulp & Timber Co., Bellingham, Wash.; Mr. T. E. Moffitt, I. F. Laucks, Inc., Seattle, Wash.; Mr. J. B. Jones, General Petroleum Corp., Everett, Wash.; Mr. R. Bell-Irving, Powell River Co., Ltd., Powell River, B. C.; Mr. A. Wells Gray, Minister of Lands, Victoria, B. C.; Mr. W. S. Kirkpatrick, Consolidated Mining & Smelting Co., Trail, B. C.



The Ladies' Luncheon at the Hudson Bay Company's Tea Room.



# Crow's Nest

A seat in the crow's nest high over the deck of a ship gives the sailor a commanding view of the rolling sea.

Figuratively speaking, Black-Clawson and Shartle also are in the crow's nest. Through constant study of mill problems, they know what machinery is needed to better the making of paper.

Without this knowledge, there would be no B-C vat, vertical dryers, Tugboat Annie, or Rotobeater.

**BLACK-CLAWSON  
and  
SHARTLE BROS.**

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## Bert Libby Passes in Shelton

B. W. "Bert" Libby, night superintendent for the Rainier Pulp & Paper Company, passed away at his home in Shelton, Washington, May 27th. Mr. Libby had a host of friends in the pulp and paper industry throughout the East and on the Pacific Coast.

His death followed a period of ill health which lasted for nearly two years. He refused to quit his work until poor health forced him to in December, 1936, but he attempted to return to the mill on April 2nd, only to return to his sick bed a week later.

Mr. Libby was born in Old Town, Maine, in 1871 and has been connected with the pulp and paper industry since he was 17 years old when he began work for his father on the construction of a pulp mill. He remained in this work until he came to Shelton in 1927. Upon completion of the mill he decided to remain as night superintendent.

While in the mill construction field with his father Mr. Libby travelled to all parts of the United States and Canada. From 1916 until he arrived in Shelton early in 1927, Mr. Libby was associated with the G. D. Jensen Company of New York, sulphite engineers.

Mr. Libby was a director of the Mason County Savings and Loan Association and a member of the Ancient York Lodge 155 A. F. & A. M. of Lisbon Falls, Maine. The Masonic order was in charge of the services which were held May 30th.

He is survived by Mrs. Libby, a daughter, Helen and a son, Victor and a sister, Mrs. H. E. Plummer of Lisbon Falls, Maine.

Active pallbearers were: Ernest Dahlgren, M. Kaphingst, M. Henley, Len Walton, Dr. R. E. Brown and Bernard Winiecki. Honorary pallbearers were: David B. Davies, Alden C. Bayley, Charles R. Lewis, Stephen Viger, J. F. Brokaw, and J. T. Burke.

## Rainier Breakdown Addition Progressing

The new breakdown addition to the Reed mill plant being made by the Rainier Pulp & Paper Company at Shelton to consolidate their chip-making operations, is progressing steadily. Because of the necessity for daily operation of the chipping division it is not expected that the new plant will be completed for operation before August.

## Orders for Raylig Increasing

Before the dust-laying campaign for the season is over the Rainier Pulp & Paper Company expects to ship to the state of Idaho between 200,000 and 250,000 gallons of Raylig. The product is shipped in 10,000 gallon tank cars direct to the sections directed for improvement by the highway department of Idaho. This product was given a thorough trial last year on the highways of that state and proved satisfactory.

Salesmen working in Idaho, Oregon and Montana are sending in encouraging reports for the prospective demand for Raylig.

Raylig is made from waste sulphite liquor.

## Pacific Waxed Acquires New Lines

Arrangements recently were completed whereby the Pacific Waxed Paper Company, 1505 Sixth Avenue South, Seattle, will serve as baking industry distributors for products of the Continental Bag Specialties Corporation of New York, and the Grant Paper Box Company, Pittsburg. Specialty bags of the Continental company designed for bakery use, and the full line of Grant boxes will be handled. Representation for both companies is to cover the eleven Western states.

The Pacific Waxed Paper Company itself produces a line of plain and printed bread wrappers, waxed carton wrappers, transparent cake and cookie wrappers, and a general line for cracker and biscuit companies. Addition of the two new lines, which have a number of exclusive features, will enable the Pacific Waxed Paper Company to supply every need of bakers for wrappers and containers, according to Allen B. Engle, president and manager. The Pacific company maintains branch offices in Portland, San Francisco and Los Angeles.

This new development marks an expansion of the Western sales activities of the Continental Bag Specialties Corporation, which has a branch office in Los Angeles, and entrance into a new market for the Grant Paper Box Company. Walter S. Grant, president of the Grant company, recently made a business survey tour of the Pacific Coast, at which time negotiations were completed for representation of his company in the West. Mr. Grant expressed himself as being very favorably impressed with the opportunity for developing new business in the Western states. The Grant company is featuring the Tredonia box, made from a patented type of moisture-proof paper.

Sales representatives of the Pacific Waxed Paper Company serving the baking industry include: Seattle office, Francis Wenks, J. C. Jackson, W. B. Parsons, M. S. Patton; Portland office, C. T. Ketchum; San Francisco office, James B. Mulholland and H. D. Cassidy; Los Angeles office, Charles L. Bronse, C. A. McGinnis and Mr. Cassidy; Hawaiian Islands, Carl H. Durshen.

## Heintzleman Sees Possibilities for Alaska

B. F. Heintzleman, newly appointed Regional Forester, returned to Juneau, Alaska the early part of May after an absence of about three years, during which time he was engaged in NRA and Forest Service work.

Mr. Heintzleman pointed out in an interview with the Daily Alaska Empire of Juneau, the bright outlook for development in Alaska due to the rising prices of paper and paper products and the fact that timber being cut back in eastern Canada becomes more costly to produce from that source. Alaska has ample supply of raw material and water power, but the original investment on a plant to compete in the world market would necessarily be large, thus it becomes a major matter to interest large capital in such an enterprise. However, Mr. Heintzleman says he is hopeful and all efforts of his office and the Forest Service will be directed to that end. He explained the one particular advantage of Alaska is government care of timber for the industry. Under this system a manufacturer does not pay for the

timber until it is cut. He does not have to go out and buy up large timber tracts in order to log it off for his plant. In Alaska he would buy direct from the government when he is ready to use the timber.

In a talk to the Juneau Chamber of Commerce shortly after his return to that city, Mr. Heintzleman said that long-term contract rates for news print should by next January bring Alaska definitely back into the picture as a potential seat of the pulp and paper industry. He also stressed the possibility of bringing in smaller but important wood-using industries such as plywood for which Sitka spruce is well suited, or venetian blinds, which Alaska could manufacture from yellow cedar.

Regarding the pulp and paper industry Mr. Heintzleman stated that two large projects calling for investments of \$15,000,000 in Juneau and Ketchikan were dropped by private industries because of the depression, but the time is now here when it is believed such projects can be profitably maintained. News print consumption is now greater than at any time in history.

## Roberg Back from Far East

Ralph M. Roberg, sales manager of the Puget Sound Pulp & Timber Company, Bellingham, Washington, returned home early in May from a trip to the Far East. Mr. Roberg left Bellingham in February.

## Taylor Visits Coast

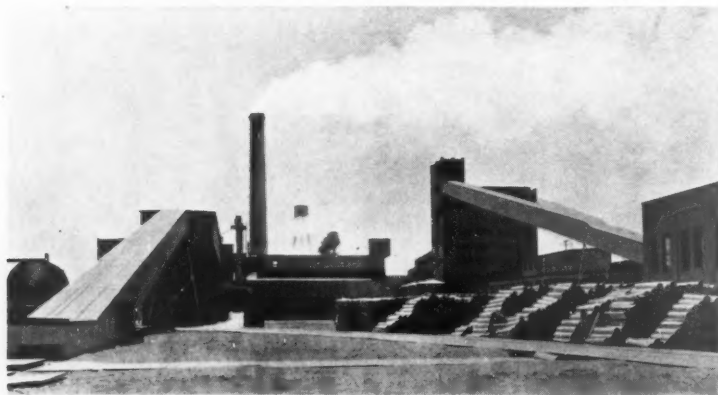
A recent visitor to the Pacific Coast was F. C. Taylor of Kobe, Japan, who travels throughout Japan and China for Rainier Pulp & Paper Co., Coos Bay Pulp Corp., Grays Harbor Pulp and Paper Co. and Olympic Forest Products Co. Mr. Taylor visits the states once a year to confer with officials of his companies and call on the mills. He has worked in the Orient for seventeen years. Mr. Taylor reports a strong demand for pulp in China and Japan.



**F. C. TAYLOR  
Sells Pulp in the Orient**



# Link-Belt Equipped



## St. Regis Kraft Co. New Tacoma Mill

Proved in service in their original mill . . . Link-Belt equipment is again selected by St. Regis in making recent extensive alterations and additions.

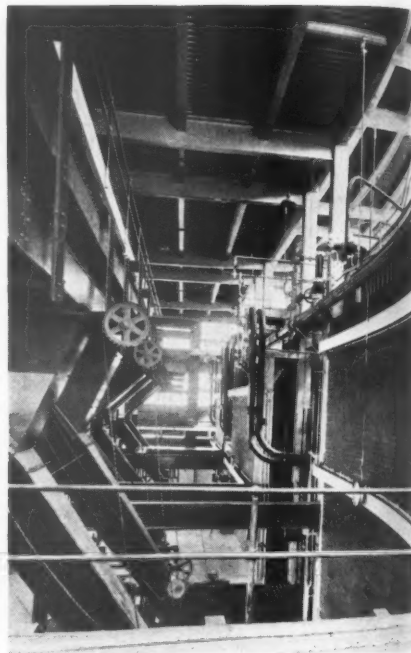
Complete Link-Belt conveying systems . . . employing Promal and malleable chains, rivetless type chains, screw conveyor units, and anti-friction belt conveyor idlers . . . handle hogged fuel, chips, salt cake, etc.

Link-Belt positive drives . . . herringbone gear reducers, P.I.V. (positive infinitely variable) speed transmissions, Silverlink roller chain drives . . . are also used for various power transmission services.

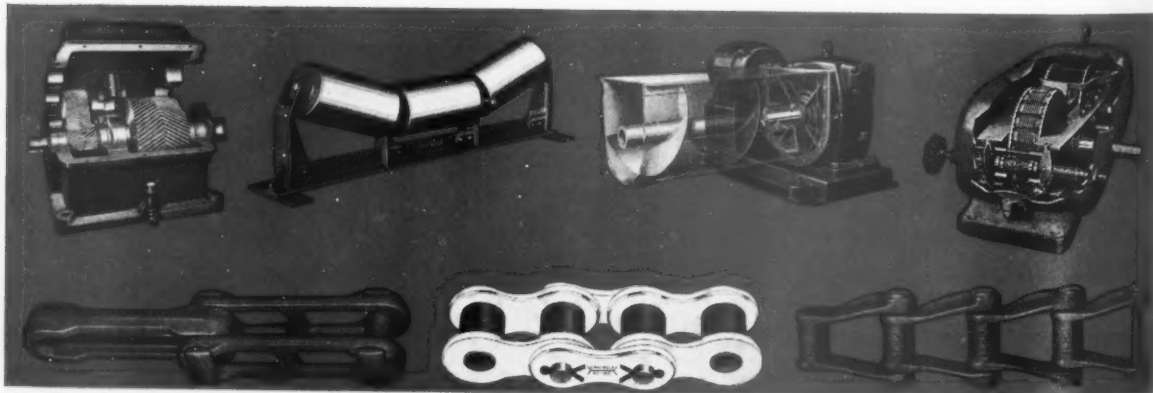
Consult Link-Belt on your next conveying or power transmission problem... Send for catalogs.

### LINK-BELT COMPANY

San Francisco   Seattle   Portland   Los Angeles   Oakland



Hogged fuel conveyor in boiler house, using double-strand rivetless chain and chutes to boilers.



## LINK-BELT

*Equipment for Handling Materials Mechanically  
Transmitting Power Efficiently*

# Recent Developments in The Bleaching of Kraft

by JOHN D. RUE\*

## Introduction

THE bleaching of kraft has made remarkable strides during recent years. In this discussion I shall use the term kraft as synonymous with sulphate, although we are all aware that in reality there are noteworthy differences between kraft as made for brown papers and sulphate as produced for the highest grades of bleached pulps. The differences occur in the care used in selecting and preparing the wood for the digesters, in the details of the cooking process, in the wet room procedure, and in the characteristics of the pulps themselves. In fact success in the production of the highest grades of bleached kraft can be attained only by careful attention to the requirements of every stage in the pulping operation from the forest to the bleachery as well as by the employment of correct methods in the bleachery itself.

## Developments in the Pulp Mill

The requirements for cleanliness in the case of the brown paper products have been relatively low. The kraft process can with care reduce wood of nearly all species and in all conditions as regards age, decay, moisture content and freedom from bark. The natural result has been that little attention has been paid to conditions that will ensure a relatively high yield of pulp which at the same time contains a minimum of lignin, of shives or soft fiber bundles, of dirt specks and of those dyes which offer great resistance to the final whitening effect of the bleaching process.

For the highest grades of bleached kraft those conditions are vital, perhaps nearly as vital as in the case of high grade sulphites. The wood should be sound and contain a minimum of knots and other defects. It must be thoroughly barked. The chips should be uniform. The digester capacity should be such as to provide ample time for relatively slow rates of cooking at moderate temperatures otherwise the uniformity of impregnation and of pulping essential to the best grade of product will be lacking. The brown, washed pulp must be so thoroughly defibered that it can be passed through flat screens with relatively fine cut plates. Fiber bundles which reach the bleachery will not be completely chlorinated and may persist throughout the bleaching process as off-colored particles.

Particles of dirt originating in the bark and knots, particles of iron rush or iron sulphide and those of incidental origin should as far as possible be removed by the fine screens supplemented by a well designed ruffling system. The iron compounds will, of course, dissolve

to a greater or less extent in the acid chlorination stage. The ferric iron readily attaches itself to the pulp and contributes a yellowish color impossible to remove by bleaching. It may even result in catalyzing the destruction of fiber strength during bleaching stages.

Of great importance to the successful bleaching of kraft to a high degree of brightness is the greatest possible removal of the characteristic brown dyes. These have been reported as belonging to the phlobotannins and their permanence is probably accentuated by reaction with the sulphur in the cooking process. They are fairly readily bleached to a light straw color but resist with great tenacity any further effort to brighten them. These dyes are somewhat soluble in alkali and their content in the pulp can be reduced by adjusting the ratios of caustic and water to wood in the digesters so that at the end of the digestion the quantity and concentration of caustic is relatively high and the concentration of the products of digestion relatively low. Such an adjustment of the cooking conditions results in a reduction, to some extent, in the output per digester. That fact together with the necessarily longer cooking periods requires the installation of a larger digester volume than is considered normal for conventional kraft.

Thorough washing of the brown stock is of vital importance for two reasons: first, it decreases the chlorine consumption; and second, it reduces the content of those dyes which are difficult to bleach.

Having prepared a well washed, thoroughly defibered pulp relatively clean and strong and uniform in quality we can proceed to the consideration of the processes encountered in the bleachery.

## Basic Types of Bleaching Stages

The modern bleachery in a mill that produces a high white, high strength kraft contains several steps or stages in the process only a part of which may be considered bleaching in the older concept of the term. There are, in fact, three basic types of reactions which should be considered. If there are others they need not be discussed at this time.

### Chlorination Stage

One stage is that of chlorination. Chlorine, either liquid or gas, is injected into the stock and immediately and very rapidly reacts primarily with the lignin with the liberation of hydrochloric acid. The products of the reaction are only sparingly soluble in water or in dilute acids but are somewhat more readily soluble in dilute alkali, particularly the caustic alkalis. Chlorine in the presence of water tends to react not only as a chlorinating agent but also as an oxidizing or bleaching agent. In strongly acid media, as in the chlorination of pulp, the initial reaction is predominantly chlorination so long as there are materials

present to be chlorinated. There follows, after the rapid reaction of the first 2 or 3 minutes a secondary reaction which proceeds at a relatively slow rate and results in a substantial brightening of the color of the pulp.

Progressively increasing the dosage of chlorine in the chlorination stage reduces the drasticity of the subsequent stages in the bleaching process essential to reaching the desired degree of brightness. The strength of the fully bleached product is progressively improved. That is true so long as the dosage is not so large that excessive periods are required to exhaust the chlorine. If the required reaction period exceeds about an hour improvement in the end product may be lacking. It is possible, however, to progress still further with the strength improvement by increasing the initial dosage provided the acid reaction period is terminated after 5 to 45 minutes by the addition of lime. At a pH in excess of 8 or 9 the residual unconsumed chlorine is converted to hypochlorite which may, without prejudice to the quality of the end product be allowed to continue the reaction for 1 or 1½ hours at temperatures not to exceed 30° C. In either case, whether lime is added or not, the reaction products should be removed by thorough washing.

### Caustic Extraction Stage

Another stage may be termed caustic extraction. The purpose of this stage is to remove as far as possible any of the characteristic dyes which still may remain in the pulp. There is a divergence of opinion as to the conditions which should be set up for this reaction. In fact, those conditions may be varied with advantage depending on the quality desired in the fully bleached product. It has been the writer's experience that for a paper making pulp of high strength and high brightness the temperature should be at least 60° C. and the reaction period about one hour. From 1½ to 2% of caustic soda is required, i. e., about 30 to 40 pounds per ton of pulp. The caustic extraction may if desired be made sufficiently drastic to increase materially the alpha content of the pulp.

Thorough washing at this point is essential otherwise the undesirable products will not be completely removed.

### Bleaching Stage

A third stage is the hypochlorite bleach or the true bleaching stage. It is in this stage that the pulp is brought to the final color. The procedures followed are those with which the pulp industry is generally familiar. It may be well to emphasize, however, that it is very important to maintain a pH at least of 8 or 9 throughout the bleaching period otherwise there may be some deterioration in the physical as well as chemical properties of the bleached product.

\*Hooker Electrochemical Company, Niagara Falls, New York. Presented at the Joint Meeting in Vancouver, B. C., June 11 and 12, 1937, of the Pacific Coast Division of the American Pulp and Paper Mill Superintendents Association and the Pacific Section of TAPPI.

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### Multistage Bleaching Processes

Various multistage bleaching processes can be built up by using one or more of each of the three basic stages just described. The simplest, of course, would be a three stage process using one of each of the basic stages and in the order already discussed, i. e. (1) Chlorination (C). (2) Caustic (N). (3) Bleach (B), or in brief CNB.

For purposes of economy in the consumption of chemicals and in the interest of higher degrees of brightness additional stages may be desirable or even essential. As typical examples we may have CNB<sub>2</sub>B<sub>3</sub> or C<sub>2</sub>C<sub>2</sub>NB or C<sub>2</sub>C<sub>2</sub>NB<sub>2</sub>B<sub>3</sub>. The caustic stage may follow C<sub>1</sub> or B<sub>1</sub> or may even be repeated after C<sub>1</sub>, C<sub>2</sub> & B<sub>1</sub>. Each additional stage as indicated will result in some modification in the quality of the product and will reduce the total consumption of chlorine. The specific combination and the number of stages will depend on the quality of product which the manufacturer sets up as his objective and on the market conditions which determine permissible costs of manufacture.

### Regression of Color

Bleached kraft is notorious for the ease with which it tends to lose its brightness of color on drying and in storage. Three factors may be mentioned as contributing toward a stabilization of color or in other words toward a reduction of the tendency to regression. The first is very thorough washing at the end of each stage but especially at the end of the last stage. The other two factors

have to do primarily with a conversion of the impurities into forms that can be more readily removed by washing. In the first place the hot caustic extraction is an essential means of making the brown dyes and also the chlorinated products more readily soluble. In the second place, the stock from the last bleaching stage should normally be distinctly alkaline and it is known that alkaline materials are difficult completely to remove from the fibers. It is desirable therefore after the last stage wash to adjust the pH of the stock to less than 7. The stock should then be allowed a soaking period and rewashed. Very small quantities of chlorine water serve very well for this adjustment of pH. The chlorine provides the acid and at the same time maintains a slight oxidizing reaction until the final products have been removed.

### Semi-Bleaching Process

For the brighter semi-bleached shades, i. e., those equivalent, say, to unbleached sulphite and a little brighter, a two stage chlorine-hypochlorite process is usually adequate. For the lower shades of manila a single stage of hypochlorite produces a product of good strength and with equal or superior economy as compared with the two stage chlorine-hypochlorite.

No fixed rules can be stated which will serve as a sure guide to the selection of the single, two, or more than two stage process. Each pulp and each manufacturing situation should be studied and the process selected accordingly.

### Regional Developments

The bleaching of kraft has been going on for 15 or 20 years both in North American and European countries. Except for 1 or 2 isolated cases, however, the products have until very recently been of relatively low color. By the end of the current year there will be at least seven large plants in the United States and Canada producing bleached kraft pulps of high quality and high brightness: two in Eastern Canada, one in the Lake States, three in the Southeast, and one on the Pacific Coast. Also there are on the American market the products of at least three European mills which are going a long way toward setting a pace for the American manufacturers.

It is interesting to note that there has been a wide regional distribution in the development of this new and rapidly growing branch of the pulp industry.

### Quality of Product

Representative products are not yet available from the newer mills in the United States. It may be safe to predict, however, that the pulps, while probably slightly inferior to bleached sulphites in brightness, will be superior to them in strength. The bleached kraft pulps will without doubt find many uses where superior strength will give them a pre-eminent position. A large portion of the bleached kraft, however, despite its slightly inferior color may be expected to compete directly and successfully with the bleached sulphites.

### St. Helens Net Income Almost Equal to 1930

The 1936 report of the St. Helens Pulp & Paper Company of St. Helens, Oregon, just recently released, shows a net profit of \$286,121. Although this fell \$113,000 short of the 1929 net, it was \$1,200 less than the net profit of \$287,314 in 1930.

St. Helens' 1936 profit showed a remarkable advance of \$130,293 over the \$155,828 net in 1935. Net profit per share in 1936 was \$1.43 as against 76 cents in 1935 on 199,934 shares.

The St. Helens statement further reflects both good management and good business. During 1936 dividends totaling \$279,907 were paid to stockholders but \$6,214 less than the net profit. At the same time the bank loan of \$375,000 which showed on the report for 1935 was reduced to \$175,000 in 1936.

The item of interest, discounts and premiums dropped to \$7,993 in 1936 from \$54,007 in 1935. This item amounted to \$73,179 in 1928. In 1935 the company retired its 6½ per cent bonds in the amount of \$518,000 partially out of surplus and partially through a \$375,000 bank loan.

Taxes in 1936 rose to the highest point since the company began operations at the close of 1926, amounting to \$70,114, an increase of nearly \$40,000 over 1935 taxes. Depreciation has risen steadily, as is normal, reaching \$191,958 in 1936 against \$189,841 in 1935.

In only one year, 1932, has St. Helens shown a loss which amounted to \$33,181.

During 1936 surplus was increased \$6,213 to \$1,241,815 plus a fixed paid surplus item of \$1,031.

Working capital declined \$29,184 at the end of 1936 when it was \$698,058, as compared with \$727,242 at the end of 1935.

Current assets of \$933,786 at the close of 1936 were over four times the current liabilities of \$230,701. Net worth of the St. Helens Pulp & Paper Company was \$3,242,186 at the close of 1936, or \$16.21 per share. Per share book value in 1935 was \$16.18 and in 1934 \$16.05.

Max Oberdorfer is president and general manager. The St. Helens Pulp & Paper Company has been under his management since it was established more than ten years ago as a manufacturers of quality kraft paper and bags.

### Heritage Joins Wood Conversion Company

Clark C. Heritage, recently resigned as technical director of the Oxford Paper Company at Rumford, Maine, to become development engineer for the Wood Conversion Company of Cloquet, Minnesota, an affiliated Weyerhaeuser company, manufacturing Balsam Wool and NuWood, a fiber wallboard.

Mr. Heritage is well known on the Pacific Coast through his past connection with the Forest Products Laboratory of Madison, Wisconsin, and as a past president of TAPPI. The annual TAPPI Fall meeting was held in Portland, Oregon, in 1934 during Mr. Heritage's presidency.

### Lamont Buys Pacific Safety Paper

The Pacific Safety Paper Mills of Los Angeles was sold April 1st to George Lamont & Sons of Nutley, New Jersey. All inventory on hand, accounts, brands and designs were included in the transfer.

### Jaite Building Addition at L. A.

The Jaite Company of Wilmington, California, will build an addition to its factory at 830 East D Street, for completion the latter part of June. The new annex will cost less than \$20,000. It will be of steel and concrete construction and will have a ground dimension of 63 by 120 feet. The Austin Company drew the plans for the structure and bids were in order for the building of the project at press time. The annex will be used primarily for storage purposes.

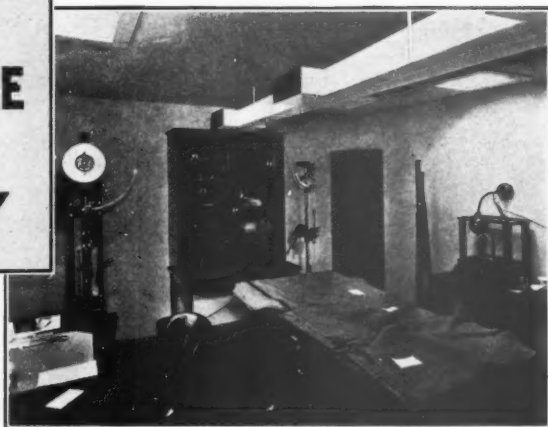
### Port Townsend Extending Dock

At the end of May the National Paper Products Company Division of Crown Zellerbach Corporation, Port Townsend, announced construction would soon start on an extension to its dock and warehouse. Contracts were let to the General Construction Company for dredging and to the Olympic Piledriving Company of Port Townsend for building a dock extension and warehouse.

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**POSITIVE CONTROL  
OF BOTH  
TEMPERATURE  
AND  
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*View of a Test Room  
equipped with Ross  
Conditioning Apparatus  
showing the ducts that  
insure distribution of  
conditioned air.*



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A modern testing laboratory is essential to provide the definite test standards that paper buyers expect. Standards as varying as the outside weather detract from the prestige and profits of the paper maker. To meet modern laboratory requirements and to insure positive control of both temperature and humidity, paper mills and converting plants are installing the dependable Ross Conditioning Units.

Ross equipment provides definite tests through absolute control of temperature and humidity throughout the entire year, regardless of outside weather changes. It is economical to install, accurate in results and simple to operate. Ross conditioning Units are furnished in various sizes—each complete and extremely compact. We invite inquiries from any mill that is considering installation of a new laboratory or planning to modernize present laboratory equipment.

*Whether your requirements are for laboratory equipment or a complete air conditioning system, our engineers will be glad to submit reliable recommendations based upon over a quarter of a century of experience in this work. Write our office for details.*



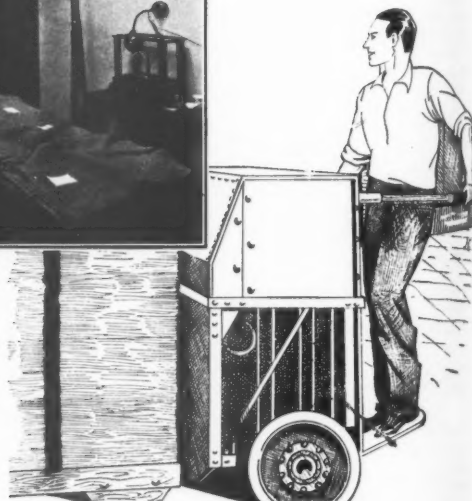
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# The Trend in Sulphite Pulping

by ANDREAS CHRISTENSEN\*

At no time in the history of the sulphite process have so many improvements been introduced as during the past ten-year period.

Research and development work has been carried out since the earliest days of the industry, and the mass of valuable records that have been made available have greatly aided in effecting changes. Technical literature, dating back to the pioneering days, describes many of the process improvements which conditions have only recently permitted us to adopt.

This is particularly true of the acid making and digester departments, where the corrosion problem was the most acute. No attempt was made at standardization of fittings and machinery, and the average mill would reduce auxiliary equipment in these departments to a minimum to avoid excessive replacement charges.

Process equipment, that otherwise would have effected definite savings in the operation, was abandoned, as heavy maintenance costs and down time would more than cancel the benefits. That progress was slow, and few revolutionary changes were introduced until recent years to improve on the original process, was chiefly due to lack of suitable construction materials. With this obstacle overcome, development work has forged ahead rapidly, and today greatly improved machinery has been made available to the industry.

During the early period, when equipment was crude and very few instruments were available to serve as guides, the cooking of sulphite pulp was considered an art requiring considerable personal skill, and the success of the sulphite mill was, in a large measure, dependent on the operators in the digester department. Introduction of chrome nickel steel has been responsible for completely revolutionizing the digester operation and control.

The original alloy, which contained 18% chrome and 8% nickel, did not quite meet the requirements for machineability and corrosion resistance, but later developments in this field have produced alloys which fully meet the needs of the industry.

Many factors have influenced the recent demand for improved quality and reduced operating cost, the most important of these being—competition with European pulp, advances made in the bleaching of kraft pulp, increased paper machine speeds, and expansion of the rayon and cellophane industries.

The rapidly increasing demand for sulphite pulp for the chemical conversion industry has diverted a large percentage of the world's output to this field. Canadian and United States mills alone in-

creased the production of this pulp from 4,000 tons in 1920 to 250,000 tons in 1935. Success in this field required improved methods of operation and control, as the specifications for these types of pulp were much stricter than for paper pulp.

Advances made in the bleaching of kraft pulp enabled this product to compete successfully with sulphite, and, due to its superior strength, it has gained rapidly in use.

The low pulp prices prevailing for a number of years forced the mills to adopt modern manufacturing methods to reduce costs and enable them to continue operating. Paper mills were constantly increasing machine speeds, and demanded pulps of improved strength and uniformity to accomplish this without lowering the quality of their product.

## Preparing the Chips

It is only natural that to improve on the pulping operation it is necessary to start with chips of uniform quality.

In Mid-western and Eastern mills, where the pulp mill usually receives its winter supply of pulpwood during the summer months, when river and lake transportation is available, more stress has been laid on uniform seasoning.

The operation of the wood yard is planned on the basis of rotation, in such a manner that the oldest wood is consumed first. This accomplishes a two-fold object; it prevents loss due to decay, and enables the pulp mill to operate on chips of uniform moisture content.

Where seasonal conditions permit cutting and delivery throughout the entire year, it is advantageous to cook the wood green. Not only does the freshly cut timber produce pulp of improved quality, it also increases the yield and releases operating capital that otherwise would be tied up in wood inventories.

Chipper design has been greatly improved, resulting in more uniform chips and less waste due to sawdust.

The controversy about high speed versus low speed chippers has resolved itself into more stress being laid on the arrangement of the feed. Both types are producing chips of good quality, providing the rate of feed conforms to the speed of the disc.

## Loading of Digesters With Chips

The conventional method of allowing the chips entering the digester to fall in a steady stream in the middle without deflecting part of the flow towards the outside will invariably result in a densely packed center core, with loose packing around the walls. This condition not only causes uneven distribution of heat, which will reflect itself in the quality of the pulp, but it also materially reduces the digester output. With the idea of correcting this condition, various mechanical and steam operated devices have been introduced in recent years.

One method employs a simple motor operated device, using an adjustable pitch propeller which not only accelerates the speed downward, but also causes the chips to fall evenly over the entire surface of the digester.

It has been possible, by the aid of such equipment, to introduce from 10% to 30% more chips, and reduce the number of cubic feet of digester space required per ton of pulp below 400.

Not only will the improved loading reflect itself in a more uniformly cooked pulp, but it will also considerably increase the output per digester and effect savings in chemicals and steam.

## Chip Weighing

To accurately determine the yield of pulp from the wood consumed has been a difficult matter, owing to the many factors influencing wood measurements. Whether the purchases were made on the basis of cordwood or as logs, the diameter of the tree would have considerable bearing on the amount of wood substance contained in a given measurement. In a great many operations, the actual yield was not definitely determined until an inventory was taken of the wood supply, either once or twice a year. This figure would only indicate the amount of pulp produced per cord or M feet as purchased, but did not offer an opportunity to check this against the actual yield obtained from the solid wood.

The installation of weightometers on the chip belt to the digesters affords a daily check, and considering that the wood constitutes the largest single item of expense in the production of pulp, it is important that this information is available.

## Cooking Acid Control

The process of manufacturing the cooking acid is fairly well standardized, and, with a few exceptions, is accomplished in the conventional two tower system. Seasonal changes will, to some degree, influence the quality of the acid, and to eliminate this variable, some mills are using well water during the entire year to insure constant temperature, and others have installed a pressure tower in addition to the regular system.

The function of the pressure tower is to increase the free  $\text{SO}_2$  in the solution above that which can be absorbed in the acid system, making it possible to maintain a constant  $\text{SO}_2$  in spite of changes in water temperature. In the design of sulphur burning equipment, the importance of ample combustion space is stressed. Gas temperatures in excess of  $1100^\circ \text{C}$ . leaving the combustion chamber are very common, as well as gas concentrations in excess of 18%  $\text{SO}_2$ , and are responsible for reducing  $\text{SO}_2$  in the cooking acid to a minimum.

The development of the hot acid recovery system, which essentially utilizes the heat in the relief gas and liquor to

\*British Columbia Pulp & Paper Company, Ltd. Presented at the Joint Meeting of the Pacific Section of TAPPI and the Pacific Coast Division of the American Pulp and Paper Mill Superintendents Association, Vancouver, B. C., June 11 and 12, 1937.



preheat the cooking acid before it is pumped to the digesters, has been instrumental in insuring a uniform acid temperature throughout the year.

Introduction of the hot acid accumulator was responsible for the elimination of relief coolers, and consequently effected considerable saving in heat.

Use of hot acid at the beginning of the cook makes it possible to shorten the cooking hours and consequently increase the mill output. It also materially reduces the peak steam demand on the boilers, which usually was the most severe in the early part of the cook.

### Circulating Systems

Possibly the most interesting contribution to the art of sulphite pulping in recent years is the introduction of forced circulation and indirect heating equipment. The advantages of such equipment have long been recognized, but the benefits could not be realized until construction materials having adequate corrosion resistance were made available.

The use of a circulating pump only, admitting steam directly to the digester through nozzles in the bottom cone, offers many advantages over cooking without the aid of mechanical circulation. To realize the full benefit from this system, indirect heating should, however, be added. This is best accomplished in rapid flow single pass heaters of such design that frequent inspections may be made without delaying the operation.

The most important of the benefits derived from indirect heating are:

1. Improved quality and yield by preventing dilution with condensate in the early part of the cook. Also a saving in chemicals.
2. Low pressure steam used for cooking.
3. Not over 50 lbs. gauge, with greater recovery of power.
4. Return of all condensate to the boilers to be used for makeup water and improved operation in the boiler house, due to steadier steam demand.

To heat a solution as unstable as calcium bi-sulphite in a heat exchanger has offered some interesting problems. In most instances, the difficulties encountered were due to poor operating conditions in the acid plant and too high a steam pressure. When relatively thick coatings of mono-sulphite or calcium sulphate deposit on the tube walls, and are not immediately removed, there is always a danger that quantities of cooking acid, which has been trapped by the lime, will be oxidized to sulphuric acid and corrode the tubes. By maintaining a ratio of about 20% lime in solution to the total strength of the cooking acid, the tubes will keep free from scale, and tube cleaning may be almost entirely eliminated. Saturated steam of 50 lbs. gauge pressure contains sufficient heat to complete the cook.

### Instrumentation

A wide range of instruments has been made available to check and control the various phases of the operation.

Several of these control devices owe a good part of their success to the use of chrome nickel steel for all parts coming in contact with the cooking liquor. Where a hot acid accumulator is used, the most common practice is to mount the instruments on a separate panel in the digester room.

From this point, acid temperature may be automatically controlled by the aid of a heat exchanger, also pressure, and a record is kept of the liquid level, which also may be checked with sight glass.

A typical installation in connection with digester operation is as follows:

1. Recording and integrating steam flow meter for hand control, or where forced circulation is used, time temperature controller which automatically regulates steam flow following a predetermined cooking curve.

2. Recording pressure controller, which maintains a fixed pressure on the digester, and handles the relief automatically.

3. Liquid level recorder, and a sight glass to check its reading.

Temperature recorders are often installed with two or more bulbs to determine variables in different parts of the digester.

In addition, there are usually numerous other instruments both indicating and recording on steam, water and relief lines, and where heat exchangers are used and the condensate is returned to the boiler house, a record is kept of the pH of this water; this latter instrument may be equipped with an alarm system to warn the power plant of leakage in the heater.

### Determining End Point of Cook

To accurately fix the point at which the cook is completed and the digester should be emptied, is one of the most important functions of the operators in that department. The methods which are most commonly used—gauging the liquor color from standard samples, blowing stock samples, and testing for bleachability and determining the amount of  $\text{SO}_2$  in the cooking liquor by the iodine method—give a good indication of the progress of the cook, but many factors will influence the reliability of the tests. Determination of pH of the liquor as an indication of the progress of the cook has been tried but has not been developed beyond the experimental stage.

To determine the end point becomes a comparatively simple matter where indirect heating and forced circulation are used, as the distribution of heat is so uniform that the rate of dissolving the lignin is the same in all parts of the digester. Without forced circulation, it is not always possible to secure a sample of either stock or liquor that will be representative of the average condition existing in the digester.

### Modern Pulping Methods and Their Relation to Power Plant Design

Boiler pressures have been increased rapidly in recent years, and back pressure and bleed type turbines afford an opportunity of inexpensive recovery of power without lowering the quality of the steam for process work.

By reducing the pressure of the steam used for cooking down to 50 lbs., which is possible using heat exchangers, a much better heat balance may be worked out, and considerable additional power will be made available.

Return of the condensate to the boilers will make it possible to operate a practically closed system, reducing the amount of raw makeup water to a required minimum.

### Technical Control and Pulp Testing

Very few sulphite mills operate today without keeping a close check on the physical and chemical characteristics of the pulp. Testing methods have been developed that will aid the operator in making corrections before the damage has been done. Before pulp is shipped, a complete record is available, and knowing the requirements of the respective customers, it becomes a simple matter to select a suitable product for the individual mill and avoid complaints on off-grade pulp. This also applies to the mill that consumes its own pulp.

In the latter case, by keeping the paper mill informed about changes in the quality of the pulp, adjustments may be made on the paper machines to avoid turning out quantities of off-grade paper. The function of the control department is essentially that of supplying the operators with the necessary information to enable them to make the necessary adjustments and consistently turn out a product of uniform quality.

### Straw Project in Liquidation

With the appointment last month of Allan Lamphere as liquidating receiver of the Palouse Pulp and Paper Company by the superior court of Colfax, Washington, the organization passed into the final stages of dissolution. Organized in 1929 with the intention of constructing a pulp and paper mill to utilize wheat straw from the Palouse country, efforts were abandoned in 1930 without any construction being undertaken.

A petition to dissolve the corporation and to name a liquidating receiver, filed in court, was signed by E. E. Boone, Roy Smith, A. K. Harrington and J. A. Twitmeyer, directors. Of the \$40,000 subscribed in capital stock, 25 per cent was paid for in cash. Lamphere's bond was fixed at \$1000.

### Sidney Roofing Very Busy

Sidney Roofing & Paper Company, Victoria, B. C., producing about 30 tons daily, is far behind in orders and reports the best business prospects in years. Early in May the company had orders for delivery of 800 tons.

R. W. Mayhew, managing director, says that the Vancouver plant and warehouse being built on the Industrial Reserve area will be ready for operation some time in June.

In addition to providing increased mainland storage space, this plant will turn out wall board.

### Mayhew Honored

R. W. Mayhew, managing director of Sidney Roofing & Paper Company, Victoria and Vancouver, B. C., was elected vice chairman of the B. C. division, Canadian Manufacturers' Association, recently.

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# Announcing... A New Type NORTON PULPSTONE

## Featuring — GREATLY REDUCED INITIAL INVESTMENT

The need for a stone requiring a lower initial investment combined with a shorter life prompted the development of the Norton Type P Pulpstone.

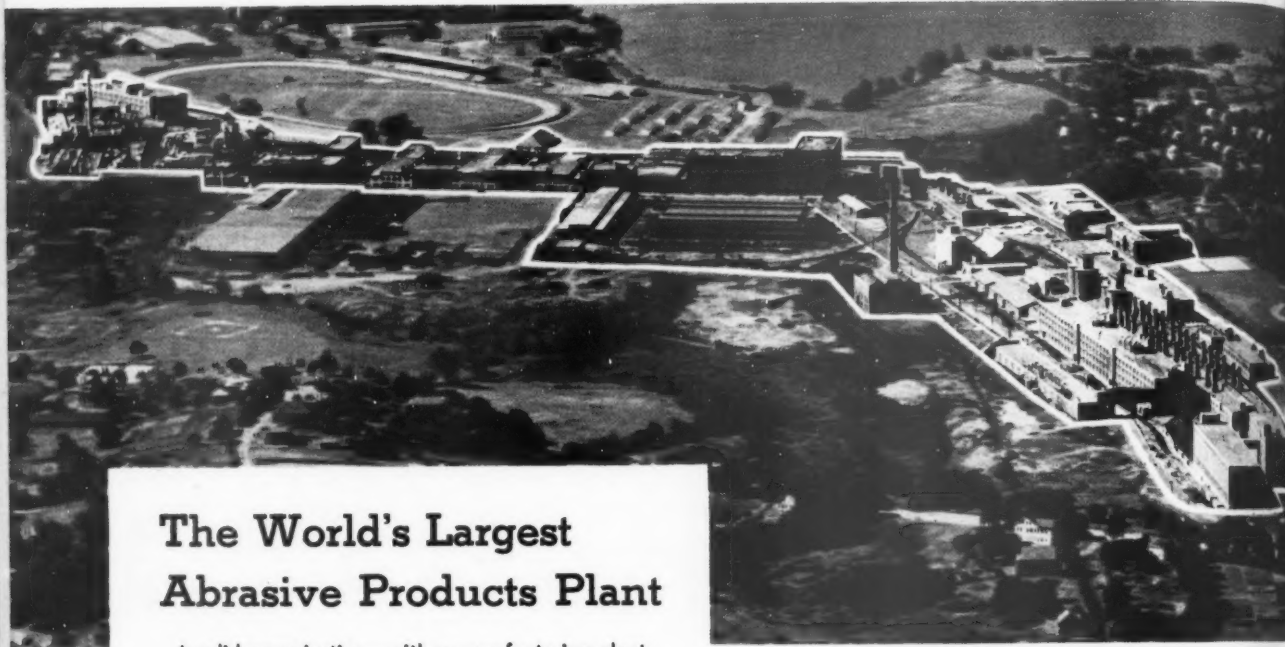
The long life of the present Norton stone is well known. Hundreds are in use, a large number of them running over five years and still good for several more years' service. Such users will welcome this new stone because of other reasons besides the low cost—such as affording a more reasonable opportunity to overhaul equipment or to modify grit or structure to meet changing market or wood conditions.

The grinding action of this type P stone is identical with the standard Norton stone. The essential difference is about 40 per cent less abrasive at a corresponding reduction in price—making possible a higher average peripheral speed throughout its life with the cost per ton of pulp remaining practically the same.

Although now officially introduced, the new Type P stone has already been carefully tested and proven in the field. It is definitely a dependable Norton Pulpstone at a substantial price reduction.

# NORTON ABRASIVES

Back of the **NORTON PULPSTONE . . .**



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A solid organization—with a manufacturing plant containing over two million square feet of floor space—whose products are known and used the world over.

An organization with fifty years' experience in the development and manufacture of abrasives and abrasive products.

Products that include in addition to pulpstones, grinding wheels, abrasive grain for polishing, abrasive bricks and sticks, sharpening stones, non-slip floor and stair tiles and aggregates, refractories and laboratory ware, grinding and lapping machines.

Extensive laboratories where skilled research workers—chemists, ceramists, engineers—are constantly at work furthering the service of abrasives and abrasive products in all industries.

A large electric furnace plant for the production of abrasive materials suitable for all requirements of industry.

Branch factories in Canada, England, France, Germany and Italy and sales and distributing organizations in all industrial centers.

A reputation to sustain throughout the world.

**NORTON COMPANY, Worcester, Mass.**



# NORTON ABRASIVES



# Powell River In Export Pulp Field

Powell River Company, whose big British Columbia mills have concentrated on production of news print in the past, is entering the export pulp field.

As a first step in a \$400,000 program to diversify the company's production, a Kamyrt wet machine is to be installed. Beginning in September, the company hopes to have an output of 1,000 tons of wet sulphite laps per month, and if the market justifies further expansion this production will probably be increased substantially.

The Kamyrt machine, of 120-inch width capacity, will be able to turn out 30,000 tons a year when operating in full stride, but for the first few months production will be held down to about 50 per cent of capacity.

Whether the company will go ahead with installation of a drying unit as well as a Kamyrt wet machine is something that hasn't been decided yet. The company's product under plans so far provided will be 55 per cent dry, and if in marketing it is found that prospective sales would justify further drying the additional plant will be installed.

Entry into the export sulphite pulp field marks the most important step taken by the company since Harold S. Foley assumed general direction of Powell River Company as executive vice president about a year ago. It also indicates a significant step in the production history of the company, which until now has scrupulously left the pulp field alone.

"The wonderful improvement in the pulp market the world over convinced us that this was the thing to do," Mr. Foley told Pacific Pulp & Paper Industry in discussing the company's departure into the pulp business. "In the past we considered our sole function to be manufacturers of news print. But now we are recognizing the value of diversification — something that Powell River Company has never had before."

## Pulp Instead of News Print

Incidentally, Powell River Company will be able to utilize a large surplus of pulp by going into the sulphite trade. Production of pulp has been heavier than justified by the news print machines that are so far installed. The pulp supply is maintained by two 84-inch wet machines for groundwood laps and two 84-inch wet machines for sulphite laps. Although the company has adequate power for an additional news print machine, and this additional machine is a part of the general future program of the company, the management has hesitated to order any further news print expansion under present market conditions. Even with news print to sell at \$50 a ton next year, the company's costs of operation have increased, and the executive does not feel justified in authorizing the necessary capital expenditure for another machine. Marketing the surplus pulp at a minimum treatment cost has afforded the company an opportunity of turning to profitable account a considerable volume of excess pulp whose production in the

past has been of little value to the company.

"Demand for pulp today is practically world-wide," said Sales Manager William Barclay, who has been scouting for market outlets for the company's new product. "There is no difficulty about finding a buyer. We could sell an almost unlimited amount of bleached or unbleached sulphite pulp, but we are selecting our customers with a view to permanence and dependability. We are in the sulphite pulp business to stay; it isn't just a temporary development with us to cash in on a sudden market movement. Fortunately, it's a seller's market and we can pick and choose our customers."

One reason for Powell River Company's decision to launch pulp production was the abandonment of the unbleached sulphite field by British Columbia Pulp & Paper Company, which for many years has been the chief producer of both the bleached and unbleached article in British Columbia. Believing that the long-range demand for bleached sulphite offered the better prospects, President Lawrence Killam of B. C. Pulp ordered that both the company's mills at Woodfibre and Port Alice be made exclusively bleached sulphite plants. This left the unbleached field open, and Powell River Company was quick to enter it.

## Pacific Mills Also Selling Pulp

On a smaller scale Pacific Mills, Ltd., is entering the export sulphite trade, according to John H. Young, resident manager. Pacific Mills, however, has had a somewhat diversified output for some years and the shipments of pulp do not represent a departure from established policy. Mr. Young says that it is not the intention to make any new installations at Ocean Falls to accommodate the pulp end of the business.

Action of Powell River Company is just one more development in the somewhat spectacular recovery of the pulp industry in British Columbia. In addition to the operations of the two large news print companies and the conversion to bleached sulphite of the two B. C. Pulp & Paper mills, Port Mellon Operating Company is now producing kraft pulp steadily. Considerably more than \$2,500,000 has been spent or authorized to be spent in one way or another in the pulp industry in British Columbia during the past year.

## B. C. Government Encouraging Industry

The British Columbia government is encouraging the pulp industry inasmuch as it helps to solve the problem of utilizing hemlock, still a neglected wood in the province's lumber industry. Export of pulp from British Columbia advanced from 75,000 tons in 1935 to 89,000 in 1936, and this year exports are expected to be more than 100,000 tons. Japan is the chief buyer of B. C. pulp at present, although Powell River Company expects to sell a fairly large quota of its

new production in the Middle West and in Europe.

Increasing uses for wood cellulose are given as the chief reason for the uptrend in the pulp market, apart altogether from the rise in news print and other paper demand. Unlike news print contracts, those for sulphite paper are a private arrangement between producer and consumer, and the market level is quickly responsive to changes in the general level of commodity prices. Following 1929, the price dropped from \$78 a ton to a low of \$41 in 1932. In the next four years increases went into effect, and the United States delivered mill bleached contract prices for the first three months of 1937 were \$55 a ton under contract, with prices set at \$62 for the second quarter. The present "spot" prices are said to range around \$80 to \$90 a ton.

## Pacific Mills Building Warehouse

Long cramped for warehouse space near its big plant at Ocean Falls, B. C., Pacific Mills, Ltd., is proceeding with a construction program to cost approximately \$200,000. When the project is finished, the company hopes to have the most modern storage and handling facilities for news print and pulp on the Pacific coast.

W. G. Swan, Vancouver engineer, and associates, have been given the job of designing the structures, which will include a wharf 50 by 300 feet and a two-story warehouse 170 by 220 feet of heavy timber construction. The wharf will be equipped with a Barlow elevator for prompt handling of freight, and will be based on creosoted piles.

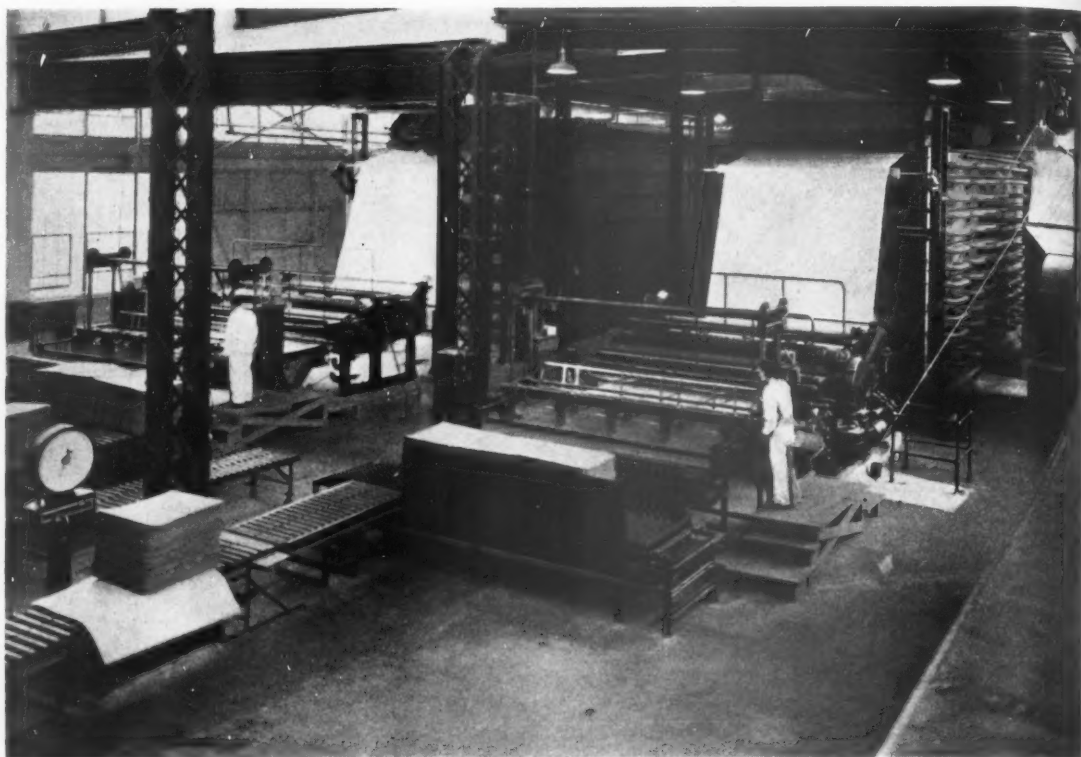
Work in connection with the project has already been started. Considerable dredging and sounding are to be done, and test piles are now being sunk.

The company will probably do most of the construction with its own work crews, although some of the building may be done by contract, depending on conditions. In any event the wharf and warehouse will be finished in about three months.

The new building represents additional space and will not replace accommodation already available. The old warehouse will continue in service, as well as the wharf. Growth of the company's re-manufacturing and converting business, centered in Vancouver, has necessitated expansion of the facilities for prompt handling of pulp from the mill, and the larger quarters will provide the company with what it has long needed.

## Reciprocal Agreements Reduce American Labor

The National Association of Manufacturers has published statistics estimating the extent to which the reciprocal trade agreements have affected labor. The number of man hours required to produce the paper and paper products imported in 1936 in excess of the imports for 1935 is given as 21,809,000, while that required to produce the excess of exports in 1936 over 1935 was 3,500,000 hours. This is a net loss for American labor in 1936 of 18,289,000 hours, equivalent to the loss of a year's work for over 9,000 men.



*The Two Flakt Dryers in the St. Regis Kraft Company's Bleached Kraft Pulp Mill, Tacoma, Washington*



# *The FLAKT DRYER*

## *THE NEW PATENTED DRYING MACHINE FOR PULP GIVES SOMETHING NEW TO PULP INDUSTRY*

FLAKT is an ancient word that means something pleasant which gives comfort. To pulp it means a mild drying, higher quality and to the management it means less expenses and increased profit.

FLAKT dried pulp is very easy to dissolve, does not lose color or strength and gives 20-40% saving in steam cost.

St. Regis Kraft Company installed two FLAKT Dryers on this continent and other machines will be operating at the end of this year at Bellingham, Washington, Woodfibre, B. C., and Cornwall, Ontario. These are only a few examples out of a hundred installations in ten different countries on three continents.

The FLAKT DRYER Is Developed by

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The EAST by Paper Machinery, Ltd., Montreal, P. Q.

The WEST by A. H. Lundberg, 3311 1st Av. S., Seattle, Wash.

## Union Bag Plant To Be Ready in August

Rapid progress is being made on the construction of the new Union Bag & Paper Corp. plant in Los Angeles. The re-inforced concrete walls of the first floor have been poured and the walls of the second are being poured. The floor of the second story is in. It is expected now that machinery will be moved in beginning July 1 and operations will begin August 15.

## Hawley Award Appealed

After extended litigation, a verdict was returned last month in federal court at Portland, Oregon, awarding the Hawley Pulp & Paper Company \$76,500 against 13 insurance companies which had issued policies on the Hawley wood mill at Milwaukie, Ore., which burned Aug. 13, 1933.

This was the amount of the company's loss in the fire, and the sum they had asked in the suit.

The case has been appealed, and parties to the suit are now awaiting hearing of the appeal.

## Cargo Space At Premium

Shipping space continues one of the major worries of British Columbia pulp and paper exporters, and there appears to be small prospect for improvement for several months.

Not only have freight rates on ocean carriers increased drastically, but shippers are finding it difficult to book space of any description at any price.

William Barclay, manager of Powell River Sales Company, distribution auxiliary of Powell River Company, does not expect lasting improvement until next year by which time newly built tonnage will be available. General recovery of world trade, scrapping of old vessels without adequate replacement, dislocation of shipping services following the long maritime strike on the Pacific coast, and the various shipping blockades effected as a result of the Spanish civil war are cited by Mr. Barclay as responsible factors. He believes that the diversion of ships consequent upon the coast strike has now been pretty well straightened out, however.

Lawrence Killam, president of B. C. Pulp & Paper Company, says that shipments have been held back to some extent by shortage of shipping, and the same experience is reported by representatives of Pacific Mills, Ltd., Westminster Paper Company and Port Mellon Operating Company. John H. Young, manager of Pacific Mills, states, however, that the company has not been seriously inconvenienced and that while ships are scarce deliveries have been made according to schedule.

Powell River Company ships a large proportion of its Australian business by regular liners maintaining definite schedules, but this service is not sufficient to meet the demands of that market. Additional space has been almost impossible to book to Australia except subject to delay.

## James Fagan At Class Reunion

James P. V. Fagan, superintendent of the Puget Sound Pulp and Timber Company's unbleached sulphite pulp mill at Anacortes, Washington, left May 29th with Mrs. Fagan for Orono, Maine, to attend the 30th reunion of his class at the University of Maine.

The reunion was held during commencement, June 11th and 12th. Mr. Fagan was also returning to the scene of his architectural work, for he was the designer, some years ago, of the Theta Chi fraternity house at Orono.

## Maurice Phelps Leaves Camas

Maurice Phelps of the technical control department of the Crown Willamette Paper Co.'s mill at Camas, recently left for Syracuse, New York, to become technical engineer for the Solvay Process Company, manufacturers of chemicals used in pulp and paper manufacture.

## McGowan Passes at Lebanon

John McGowan, an old timer at the Lebanon, Ore. mill of the Crown Willamette Paper Co., passed away recently after 43 years of service with the company. He had been retired from active service just a month before.

Mr. McGowan lived a life of usefulness to his work and family, and was known and liked by all who visited the Lebanon mill.

## Brown and Wheelock Return

Bruce Brown, resident manager, and Frank Wheelock, chief chemist, of the Fibreboard Products, Inc., at Los Angeles, returned early in May from a month's trip through the East. They visited some fifteen mills and many of the major manufacturers of mill machinery. They found mills and manufacturers alike so heavily beset with business they are far behind in their production schedules. A generally noted comment among men they met was how long is this going to last?

## Haber in South America

Joe Haber of the sales department of Fibreboard Products, Inc., Vernon plant, California, is now on a vacation trip to South America. He is flying with Mrs. Haber on the Pan-Pacific Airways and will possibly go as far south as Chile. He will be gone for three weeks.

## Shields Passes Away in L. A.

Leslie F. Shields, a valued member of the art department of the Fibreboard Products, Inc., Vernon plant, Calif., died June 1 after a prolonged illness dating back to 1932. He is survived by his daughter, Dorothy Eileen. Mr. Shields was born in England, April 16, 1884.

## Flax Straw Contracts Made in California

According to a news dispatch from El Centro, California, the Champagne Paper Company of New York, one of the largest French manufacturers of cigarette paper, has formed a California subsidiary known as the California Central Fibre Corporation, and will purchase suitable straw from this year's flax crop in the Imperial Valley.

The announcement by Argyle McLachlan, secretary of the Southwest Flax Seed Association, said in part:

"The formation of the California Central Fibre Corporation and the plans which it has formulated for this year are the outgrowth of thorough investigations made by technical experts of the parent company, who have established the usability of seed flax straw for the intended purposes by means of actual mill tests, and who have convinced themselves of the advantages offered by Imperial valley for the operations involved. . . .

"The Southwest Flaxseed Association has entered into an agreement with a great number of its members under which many thousands of acres of flax have been put at its disposal. The California Central Fibre Corporation has in turn made a contract with the Southwest Flaxseed Association according to the terms of which it will select for purchase such straw from the contracted acreage as answers its requirements.

"The tonnage which will be purchased during the coming season is undeterminable at this time as it is impossible to foretell what portion of this acreage the corporation will find suitable for its purposes. However, it is the intention of the corporation to widen the scope of its operations year by year with a view to ultimately contracting for up to 50,000 tons of straw a year. . . .

"At this point very little can be said regarding the economical aspects of the entire proposition, but when this year's operations have been concluded the corporation will be in position to actually place a value upon the straw for its particular purposes, and will be ready to discuss the subject of price with the Southwest Flaxseed Association. . . .

"California Central Fibre Corporation has purchased land located at the angle formed by the Holton Interurban railroad and Third street and comprising approximately 30 acres, and plans are now being drawn by local contractors for the erection of a plant in which the straw will be passed through the required refining processes.

"It is considered that this enterprise, which is now but in its infancy, will be of the greatest benefit in the district, not only to the farming population whose income will be enhanced by the sale of the straw but also to the citizenry in general through employment of local labor and other advantages which will result from its extensive activities."

## Webberly Succeeds Bain

Ed Webberly, formerly beater engineer, is now beater room foreman at the Camas, Washington mill of the Crown Willamette Paper Company.

Mr. Webberly replaces Walter Bain, who recently left to join the Glidden Company of Chicago.





*The 8,000,000 gallons per day pressure filter plant of the St. Regis Kraft Company, Tacoma, Washington*

## WATER TREATMENT HEADQUARTERS

**P**ACIFIC COAST pulp and paper mills meet the Quality Standards of today with the aid of clean, pure, filtered water. Modern filtration and treatment plants, such as the one pictured above, provide a continuous supply of water, free from dirt color and slime producing bacteria.

Experience over many years in the treatment of Pacific Coast water enables the SHIBLEY COMPANY to offer the pulp and paper industry an engineering service capable of solving any water filtering or treating problem.

**Pressure Filters, Gravity Filters, Water  
Softeners and Boiler Water Treatment**

# SHIBLEY COMPANY

WATER TREATMENT ENGINEERS

1201 Textile Tower **SEATTLE**

SEneca 0366

## Larry Harris Married

Larry Harris, chemist with Pacific Mills, Limited, at Ocean Falls, B. C., attended the Vancouver convention of TAPPI and the Superintendents Association with his bride, the former Lorraine Spear of Ocean Falls. Mr. and Mrs. Harris were married June 3rd and stopped at the convention while on their honeymoon.

## Jordan Heads Everett Pulp & Paper

A. H. B. Jordan was elected president of the Everett Pulp & Paper Company early in May to succeed the late William Howarth.

The officers of the company are as follows: A. H. B. Jordan, president and treasurer; W. J. Pilz, vice-president and manager; L. P. Fortier, superintendent; J. L. Murray, sales manager; and A. B. Moody, assistant secretary.

## "Cap" Shibley Passes in Seattle

Kenneth "Cap" Shibley passed away in Seattle May 1st after a week's illness. His death was a shock to the hundreds of friends his winning personality had made for him in the years he had been associated with the pulp and paper industry on the Pacific Coast.

Mr. Shibley was known throughout the continent as an authority on water treatment and his work in designing and constructing water filtration plants on the Pacific Coast has contributed materially toward the cleanliness of Pacific Coast pulp and paper.

He was active in the Technical Association of the Pulp and Paper Industry of which he was a member. He was also a member of the American Society of Civil Engineers, the American Waterworks Association and of the Mount Baker Lodge, F. & A. M. of Mount Vernon, Washington.

Mr. Shibley had lived in Seattle for ten years and was manager of the Shibley Company, water treatment engineers. His widow, one son and two daughters survive him.

The work of the Shibley Company is being carried on actively by Mr. Shibley's friends and associates, David Henderson of Mount Vernon, who is president of the company, and W. R. Gibson who succeeds Mr. Shibley as manager.

Both Mr. Henderson and Mr. Gibson are experienced water treatment engineers. Mr. Gibson has been with the Shibley Company for over a year. Prior to this connection he was for a number of years with the Washington Pulp and Paper Corporation and the Rainier Pulp & Paper Company in an engineering capacity.

Mr. Gibson's water engineering experience goes back to war time when he was a captain in the Royal Engineers of the British Army. He was attached to the engineering corp in the Holy Land and superintended the construction of nearly a hundred miles of pipeline carrying water from the Nile to the British army advancing on Palestine.

His work during the past year with the Shibley Company has been on filter work and boiler water treatment.

# Rayon and other CHEMICAL USES OF WOOD PULP



## Japanese Staple Fiber Production Rising

To encourage production of staple fiber as a substitute for cotton and wool, the Japanese Government promulgated an Imperial Ordinance, effective April 30, exempting staple fiber from the textile consumption tax. The Ordinance also exempts from the tax, articles manufactured from yarns consisting of a mixture of staple fiber and cotton, wool, or hemp.

The Japan Staple Fiber Association was reported to have reached a decision in April voluntarily to curtail shipments of staple fiber to the United States market. (Radiograms, received May 10 and 3, from Commercial Attache Frank S. Williams, Tokyo.)

There is little doubt that the Japanese staple fiber industry has now emerged from the experimental stage and that it is destined to become increasingly important in the future. Unfortunately there is very little reliable information available concerning this industry, most of the published reports being based on incomplete data. There are no official production figures for staple fiber or for staple yarns and textiles but a survey of various trade sources indicates that production of staple fiber in 1934 totaled approximately 4,725,000 pounds, increasing to 13,500,000 pounds in 1935 and to approximately 40,000,000 pounds in 1936. Some trade estimates place 1936 production at 50,000,000 to 51,000,000 pounds, but this appears to be somewhat exaggerated, and it is believed that 40,000,000 pounds is more nearly correct. Trade reports indicate that the 1937 production may reach 100,000,000 pounds. No information is procurable regarding production of staple fiber yarn and cloth.

According to the Japan Staple Fiber Manufacturers' Association, production by member mills during January 1937, totaled 7,850,000 pounds. No later figures are procurable, but an attempt is being made to secure regular monthly production totals.

## Productive Capacity of Japanese Staple Fiber Companies

According to fairly reliable trade estimates there were 21 Japanese companies producing staple fiber at the end of July, 1936. These had a combined daily productive capacity of 148.5 metric tons (of 2,204.6 pounds each), but actual output at that time was reported as only 78.5 metric tons. A more recent compilation indicates that total productive capacity had risen to 175 metric tons per day by the end of January, 1937. On the basis of a 25-day working month, this is equivalent to a monthly capacity of 4,375 metric tons, whereas actual output in January was only 3,562 metric tons indicating that the industry is still operating at considerable less than nominal capacity. It is estimated that by the end of June, 1937, productive capacity will reach

220 metric tons per day and may rise to 332 tons by the close of this year. Quite obviously these are rough approximations since they are based on the assumption that all expansion projects will be completed exactly according to schedule.

## Japan Aids Staple Fiber Production

The Bureau of Foreign and Domestic Commerce, U. S. Department of Commerce, reports:

"In order to encourage the production of staple fiber as a substitute for cotton and wool, the Japanese government promulgated an imperial ordinance, effective April 30th, exempting staple fiber from the textile consumption tax. The ordinance also exempts from tax articles manufactured from mixed yarn of staple fiber and cotton, wool or hemp."

## Expansion of Staple Fiber in Germany

Trade estimates of staple fiber and rayon production in recent years are shown in the following table:

Staple Fiber			
Year	Metric Tons	Equivalent Pounds	
1932	3,000	6,614,000	
1933	4,500	9,921,000	
1934	7,800	17,196,000	
1935	15,000	33,069,000	
1936	43,000	94,799,000	

Rayon			
Year	Metric Tons	Equivalent Pounds	
1932	28,173	62,111	
1933	32,801	72,314	
1934	39,000	85,980	
1935	44,500	98,106	
1936	47,500	104,720	

A further expansion of staple fiber production to 75,000 metric tons (about 165,000,000 pounds) for the current year is anticipated, according to press reports. Production has been unable to keep pace with demand and the installation of additional equipment (through enlargement of existing plants and construction of new mills) is proceeding rapidly, some estimates indicating an output of almost 140,000 metric tons projected for 1938. The largest producers of staple fiber are the I. G. Farbenindustrie and Spinnfasser A. G. with a current annual capacity of 30,000 and 17,000 metric tons, respectively, according to trade estimates. (Consul Sydney B. Redecker, Frankfurt-on-Main.)

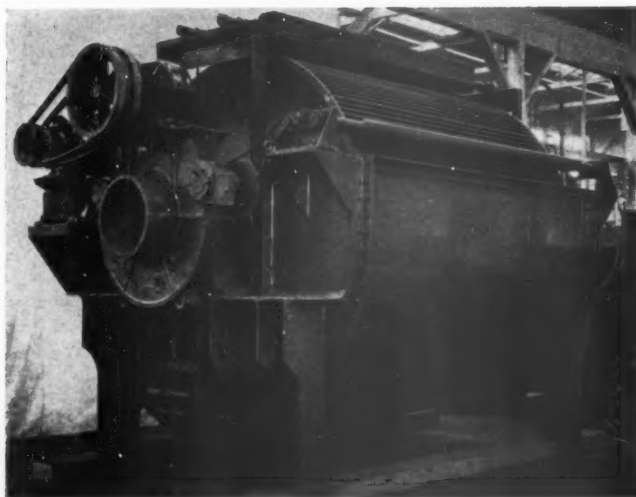
## Norwood Joins Superintendents

Merrill E. Norwood of the Columbia River Paper Mills organization at Vancouver, Washington, recently became a member of the American Pulp and Paper Mill Superintendents' Association.

# NEUTRALIZING?

*It's Not Needed with...*

## RUBBER-COVERED OLIVER-YOUNG Chlorinated Pulp Washers



Neutralization of chlorinated stock before washing to protect the washing unit against corrosion is a *continuing expense*. The initial cost of the apparatus and of an ordinary cast-iron pulp washer may be attractively low but the cost of neutralization never stops. And, further, many plants object to the after-effects of the neutralizing agent.

The rubber-covered Oliver-Young Pulp Washer saves at this point. Neutralization is not neces-

sary. Its cost is eliminated. Savings pay for the Washer in less than a year.

This is but one of the many advantages gained by using Oliver-Young Filters. Others are: low wash water ratio; minimum foaming; drum acts as separator; free flow of filtrate from wire to barometric leg; high capacity.

Every plant deckering, thickening or washing free, chemical stocks should have an Oliver-Young.

**OLIVER  
UNITED FILTERS**  
INC.



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351 California St.,  
San Francisco, Calif.

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## News Print Statistics For April and May

Production in Canada during April, 1937 amounted to 298,347 tons and shipments to 310,614 tons according to the News Print Service Bureau. Production in the United States was 78,642 tons and shipments 84,992 tons, making a total United States and Canadian news print production of 376,989 tons and shipments of 395,606 tons. During April 30,793 tons of news print were made in Newfoundland, so that the total North American production for the month amounted to 407,782 tons. Total production in April, 1936 was 360,416 tons.

The Canadian mills produced 211,294 tons more in the first four months of 1937 than in the first four months of 1936, which was an increase of twenty-two and two tenths per cent. The output in the United States was 8,063 tons or two and six tenths per cent more than in the first four months of 1936, and in Newfoundland 19,556 tons or nineteen and six tenths per cent more, making a total increase of 238,913 tons, or seventeen and six tenths per cent.

Stocks of news print paper at Canadian mills were reported at 72,223 tons at the end of April and 12,406 tons at United States mills, making a combined total of 84,629 tons compared with 103,246 tons on March 31, 1937. The opening of navigation made possible the shipment of considerable tonnage which had accumulated during the winter.

Production in Canada during May, 1937 amounted to 309,232 tons and shipments to 311,883 tons according to the News Print Service Bureau. Production in the United States was 79,003 tons and shipments 77,797 tons, making a total United States and Canadian news print production of 388,235 tons and shipments of 389,680 tons. During May 29,962 tons of news print were made in Newfoundland, so that the total North American production for the month amounted to 418,197 tons. Total production in May, 1936 was 370,387 tons.

The Canadian mills produced 253,104 tons more in the first five months of 1937 than in the first five months of 1936, which was an increase of twenty and seven tenths per cent. The output in the United States was 11,324 tons or three per cent more than in the first five months of 1936, and in Newfoundland 22,603 tons or seventeen and nine tenths per cent more, making a total increase of 287,031 tons, or sixteen and six tenths per cent.

Stocks of news print paper at Canadian mills were reported at 69,357 tons at the end of May and 12,645 tons at United States mills, making a combined total of 82,002 tons compared with 83,447 tons on April 30, 1937.

## Paper Import Classifications

Customs officials have recently taken action on a variety of imported papers which they held to have been misclassified, or undervalued according to announcement made by the Import Committee of the American Paper Industry.

The officials have held German show counter board dutiable at the cost of production in Germany, and have collected duty on a value nearly 20 per cent higher than the \$58 value claimed by the importer. The board was formerly sold with the benefit of scrip marks, and

when the United States Government's action forced Germany to stop the granting of a bounty by this method the cost of production was found to be materially higher than the value claimed by the importer. This procedure is now being followed at Boston, New York and Baltimore.

Binders board imported from Canada at a value of \$45 per ton was held by border officials to be laminated, and a duty of 30 per cent was levied. The importers then changed the character of the board to produce an unlaminated board dutiable at 10 per cent, sold at the same price.

Filing folder board from Canada has been held by Customs officials to have been undervalued and duty was collected on the actual value of the goods in Canada.

Paper napkins from Japan were held to be dutiable as partially creped paper at 6 cents per pound and 15 per cent.

Importers have asked the United States Customs Court to overrule Customs Officials on the following items:

Screening board imported from Canada as test board, classified for duty at 20 per cent, claimed by importer, a New York manufacturer of corrugated boxes, to be pulpboard in rolls for use in the manufacture of wallboard.

German Imitation Parchment, classified for duty as such at 3 cents per pound and 15 per cent claimed by importer to be dutiable under the Belgium trade agreement at 2 cents per pound and 10 per cent as vegetable parchment.

German tracing paper, classified for duty at 3 cents per pound and 15 per cent claimed to be vegetable parchment at 2 cents per pound and 10 per cent.

## Mammen Heads Safety Convention

Representatives of industrial concerns, civic safety groups, labor, insurance companies and safety engineers met in Portland June 2 to discuss arrangements for the Western Safety Conference, an annual affair which will be held in the Rose City Aug. 17-20 inclusive.

M. L. Mammen of the Crown Wilmamette Paper Company has been elected general chairman of the convention by the Board of Governors, of which he is a member, representing Industrial Safety.

The conference will discuss many different forms of safety work, including industrial, traffic, public safety, home accidents, safety education, fire, first aid work, etc.

Assisting Mr. Mammen will be Miss Ruth Murray on publicity, L. C. Newlands handling finances, Mrs. Olin Holford in charge of home accident discussion. Other committee appointments are to be announced later.

On the advisory committee will be Worth Caldwell, Lester Humphries, C. T. Haas, Ray Conway, Judge Julius Cohn, E. A. Valentine, Ben Osborne, Wilson Scott, Charles Gram, Dr. Vern Bain and Earl Snell.

## Oregon Pulp Digester Starts This Month

The 15-ft. by 48-ft. sulphite digester for the Oregon Pulp & Paper Co. is rapidly nearing completion. It was being lined at the first of June and was to be ready for cooking about the middle of the month.

## News Print Costs Rising

Rising costs of manufacture, due chiefly to wage increases and higher prices for equipment and logs, may offset a large part of the gains anticipated by Pacific coast news print mills when the \$50 a ton base price goes into effect next year.

Both Powell River Company and Pacific Mills, chief news print producers in British Columbia, have raised wages twice during the past year, and it is estimated that the cost of logs has jumped about 40 per cent during the same period.

New wage agreements in eastern Canadian news print mills are expected to increase cost of production at least \$1 a ton. If applied now, before the \$50 rate is received for news print, the new wage scale will cut deeply into the increase from \$41 to \$42.50 in the export price adopted for 1937.

The wage increases affect the following companies, all operating in Ontario: Abitibi, Provincial Paper, Great Lakes, Minnesota & Ontario, Ontario Paper and Spruce Falls Power and Paper. The last two firms are controlled by United States interests.

About 5,000 workers are affected by the increases which will range from 11 to 15 cents an hour. The unions are affiliated with the American Federation of Labor. General laborers in news print mills will receive 54 cents an hour under the proposed schedule, raising the level to the old war-time peak. The highest rates, for tenders of paper machines, will range from \$1.45 to \$2.06 an hour. They are varied according to the size of the machines.

Three most important elements behind the new wage negotiations are: 1. Announcement unusually early of an advance in news print prices; 2. Adoption of higher wages about three weeks ago by Great Northern Paper Company, major U. S. producer; 3. Competitive influence in organized labor of the CIO.

## Making 1938 News Contracts

While over 100 contracts for 1938 delivery in the United States are said to have been closed by Canadian news print manufacturers, there is an increasing number of requests for non-contract or spot supply, particularly from mid-West and Pacific coast buyers.

The tonnage for delivery to Oklahoma City in April and May was recently sold at \$52.50 a ton, this being \$5 above the full 1937 contract price for that destination.

In overseas markets the upward trend continues. The most recent Canadian quotation reported is on 3,000 tons for delivery to Japan this summer, at a price netting over \$45.50 per short ton at the mill, or the equivalent of over \$52.50 delivered at New York.

There appears to be practically no European tonnage to supply the current demand on overseas markets and it is reported that a Scandinavian mill quoted a New York merchant \$60 a ton on 2,000 tons for delivery in the second half of this year.

# Paper Trade Holds Twentieth Meeting at Del Monte

## Hecht Elected President

**T**HE TWENTIETH annual convention of the Pacific States Paper Trade Association was held at Del Monte May 13-15 this year and attracted a goodly number of western paper jobbers and mill men from east and west.

W. W. Huelat, manager of the Los Angeles division of Blake, Moffitt & Towne, ended his term as the association president with this convention and, at its close, turned the gavel over to his successor, Victor E. Hecht, San Francisco, vice-president of the Zellerbach Paper Co.

Executive vice-president for 1937-38 will be F. E. Jeffries of the Tacoma Paper & Stationery Co., a unit of the Blake, Moffitt & Towne organization. Mr. Jeffries is in line to be president for the 1938-39 term.

The association's first feminine secretary went into office at this year's Del Monte meeting. She is Miss Hildegard Wahl, who was elected to that post to succeed H. Arthur Dunn, Jr., who has been legal counsellor as well as secretary for the association but who retired as secretary to devote his entire time to the legal work. Miss Wahl also is treasurer. Mr. Dunn is a son and namesake of H. Arthur Dunn Sr., secretary treasurer and counsel, who died during the past year. Miss Wahl has been on the association's office staff 18 years.

Vice-presidents elected at Del Monte were: Roy E. Banks, Long Beach, Long Beach Paper & Stationery Co.; E. N. Embree, Seattle, Carter, Rice & Co. Corp.; William C. Lambert, Salt Lake City, Zellerbach Paper Co.; J. W. P. McFall, Portland, Ore.; A. G. Mohn, Spokane, Zellerbach Paper Co.

The nominating committee was made up of J. W. Thompson, Seattle; W. D. McWaters, Portland and W. E. Taverner, Los Angeles. Other convention committees were: Finance, C. H. Beckwith, San Francisco, chairman; Carl H. Fricke, Los Angeles, O. W. Mielke, San Francisco, and Harold L. Zellerbach, San Francisco. There was a one-man necrology committee, composed of Frank Stratford, San Francisco.

### Necrology

The grim reaper has taken a heavy harvest of paper people in the past year and the set of resolutions of regrets was longer than ordinary. Resolutions were passed for:

Hamlin F. McCormick, chairman of the board of directors of the St. Helens Pulp & Paper Co., St. Helens, Ore.; Felix Pagenstecher, vice-president of the International Paper Co., New York City; Paul W. Shattuck, Adhesive Products Co., San Francisco; Fred B. Dalem, American Sales Agencies Co., San Francisco; Fred Morton Couch, Blake, Moffitt & Towne, Los Angeles; J. C.



**VICTOR E. HECHT**  
Elected Paper Trade  
President

Ingram, Ingram Paper Co., Los Angeles; William Howarth, Everett Pulp & Paper Co., Everett, Wn; H. Arthur Dunn, Sr., Secretary Pacific States Paper Trade Association, San Francisco.

At the opening Merchants and Manufacturers Meeting held on Thursday of convention week, I. Zellerbach, head of the Crown Zellerbach Corporation, paid a tribute to Mr. Howarth, who was president of Everett Pulp & Paper Co. and who had been present at every one of the twenty meetings of the paper trades body.

"Mr. Howarth was a man who was loved by everybody who came in contact with him and to know him was a privilege cherished by all his friends," Mr. Zellerbach said. "Mr. Howarth was one of the finest characters that existed or who could exist on this earth."

When Mr. Zellerbach concluded his talk, the meeting arose and stood in reverent silence.

Charles H. Beckwith, San Francisco, Pacific Coast manager of Carter, Rice & Co. Corp., paid a tribute to the late Arthur Dunn, describing him as a counsellor, confidant and friend. Mr. Dunn served for six and one half years as secretary of the association.

Dr. Paul F. Cadman, president of the American Research Foundation and member of the faculty of the University of California, spoke at the opening meeting on the subject "Where Do We Go From Here?" and told of the changes going on in these United States

in what he described as a bloodless revolution. The convention theme, too, was along this same line as the delegates discussed means of conforming their policies and practices to new conditions in the economic order.

### Message From F. Bendel Tracy

The following message from F. Bendel Tracy, president of the National Paper Trade Association, was read before the Del Monte meeting on May 13th:

"I am assuming that some paper men are here this morning as guests of the Pacific States Paper Trade Association.

"Undoubtedly you are successful business executives who have never felt the urge to join an association, have always conducted your affairs successfully and believe that your affiliation with a trade association is unnecessary. To these few let me address my remarks.

"I am reminded of an adventure which comes to all school boys, to go to the old water hole or river or pool, gather up some planks and fasten them together with some loose boards, or slabs and a piece of rusty wire or a few old spikes, never giving any thought to whether the thing would float, as the safety of the thing did not concern us. When we shoved off, what a thrill as the raft left the shore! It was an adventure more thrilling to those aboard than it would be to one of us on the Queen Mary as she floats into mid-stream.

"Yet, someone is missing. One more cautious than the rest. Is he conservative or has he been forbidden and is he an obedient boy?

"He sees the bunch polling off shore and it creates a longing in him for adventure. He sees that he has missed something. His comrades were courageous, he is cautious, they were pioneers, he was conservative.

"It was a great alluring achievement which took the "Forty-Niners" to California to build a state of which you are all so proud. You admire their pluck and spirit. You admire and respect the pioneers of your own industry, those who have seen and recognized the need to build up an organization moulded to improve conditions in your territory. The intuitive mind saw that resourcefulness should benefit, that unselfishness should prevail and that victory would crown the supreme effort.

"Does anyone here this morning feel that the raft drifted off from shore without him, that the more adventurous have enjoyed the thrill of cooperation in building up a trade association to which he has not contributed his share, yet from which he has indirectly benefited.

Let us assume the raft is our National Paper Trade Association constructed of sound planks and slabs, tied together with the cooperation of merchants in sound functioning and creative ideas in our industry, that consumers of paper and paper products may receive some of the benefits of the well directed efforts to distributor and consumer alike, and make each one more valuable to the com-

munity in which he lives and works and marks us as successful merchants in our industry.

This brief message invites you to seriously ponder in the quiet confines of your own sanctuary, what we loyal merchants consider a PRIVILEGE, a DUTY, and may I even suggest an OBLIGATION, but the invitation is no less cordial for you to join with us.

## Tribute to William Howarth

**MR. I. ZELLERBACH:** "Mr. Chairman, members of the Paper Trade on the Pacific Coast and those who are representing Eastern Manufacturers here: Your president has asked me to say something in memory of our late friend, Mr. William Howarth, which is a difficult thing to do, particularly for one who has known him ever since he came to the Pacific Coast.

"I will go back to the year of 1893. That is long before some of you young men here, who have come into the paper trade recently, can look back to. Mr. Howarth came from England in 1892, I think, and then came to the Pacific Coast in 1893, where his brother, Leonard, was in business. He secured a position with the Everett Pulp & Paper Company in the same year.

"Mr. Howarth was born in 1864 and was a young man of 28 years when he came to the Coast. He was married and had three girls, but left his wife and these three young children in England to come on to America to make his way. Let us trace Mr. William Howarth's career from that day forth.

"Mr. Howarth was an accountant originally. He went to work in the Everett mill and under its management at that time, as I recall, the Everett mill was in trouble. In 1896 Mr. Howarth was put in charge as general manager of the Everett Pulp & Paper Company. I can recall when Mr. Howarth came into my office to tell me he had been made manager, that the mill was heavily in debt and that he wanted to know whether we would patronize his mill and would pay our bills every ten days, as he had to pay for his merchandise, that is, the raw material he was buying. We did that and from then on, you can trace the history of the Everett Pulp & Paper Company under the management of William Howarth.

"In about 1902, I think, the Everett Pulp & Paper Company was purchased by his brother, Leonard, himself, and Mr. Jordan. Ever since Mr. Howarth has been in charge the Everett Pulp & Paper Company has been one of the outstanding successes, I think, in the paper manufacturing business. Now, there must be a reason for that and that reason was that Mr. Howarth, first, was a man of absolute integrity. His word was his bond. He was a man who was loved by everybody who came in contact with him, and to know William Howarth in his lifetime was a privilege that those who did not know him, miss.

"To me Mr. Howarth was a real inspiration because he created something in his lifetime that money does not buy, gentlemen. 'One must earn it by living a life such as Mr. Howarth lived. The Everett Pulp & Paper Company, those

who had dealt with them over these many years and those who knew Mr. Howarth, although not connected with him in any business way, knew Mr. Howarth as one of the finest characters, I think, that probably existed or could exist on this earth. There never was a meeting of the Pacific States Paper Trade that Mr. Howarth did not attend with his wife and his children. Mrs. Howarth, as you know, passed away some years ago. Just another inspiration in a happy family. He raised three daughters, all married now, the eldest one married to William Pilz. I don't know whether Mr. William Pilz is in the hall, but he is here with his wife tonight. Mr. Howarth raised William Pilz, who came to work for him as an office boy, and I can safely say that whatever Mr. Pilz is today is because he was under Mr. Howarth as a boy and came through realizing what Mr. Howarth meant in the management of a business, in his association in the city and his character in dealing with the people with whom he came in contact.

"Mr. Howarth was charitable. The City of Everett where he lived, I am sure, not alone will miss him and miss his charity and his untold kindness to many, many people, but we here who have seen him every year (except in the last year, I think, since he has been ill), certainly will miss him.

"I compare Mr. Howarth a great deal with Marvin R. Higgins whom you all knew so well and who was president of



**I. ZELLERBACH**  
Paid tribute to William Howarth



**WALTER W. HUELAT**  
Retiring President

this association for some years, a man that I also had the privilege of sitting alongside for forty-two years. These are two characters that in my lifetime I had the privilege of associating with closely and I can assure you those are the kind of people who have built America. I cannot stand here and say enough in praise of Mr. Howarth because it is impossible to put into words for what Mr. Howarth stood.

"In closing, I am going to read what Mr. Victor E. Hecht said about Mr. Higgins when he gave the eulogy and I think it also fits Mr. Howarth:

"He closed his life with the greatest of all assets, the love, respect and regard of all his fellow men. Truly did he make his life sublime. He left footsteps in which we not alone can safely follow, but in which we should follow to our own advantage.

"Much of the sordidness of our every day life, many of the unnecessary business tribulations and misunderstandings will be eliminated if we do so."

"I am going to ask everybody here, if you will, to stand for a moment in tribute to our late friend whom we all loved so much, Mr. William Howarth."

The assembly arose and stood in reverent silence.

### Members

Among those present at the Del Monte convention were:

Long Beach—Mr. and Mrs. R. E. Banks, Long Beach Paper & Notion Co.

Los Angeles—W. W. Huelat, Blake, Moffitt & Towne; Lew Gronich, General Paper Co.; C. H. Fricke, R. E. Le Grant and W. E. Taverner, Taverner & Fricke; Mr. and Mrs. Philo K. Holland, Zellerbach Paper Co.

Portland—Mr. and Mrs. C. L. Shorno, Blake, Moffitt & Towne; J. W. P. McFall; Mr. and Mrs. W. D. McWaters, Zellerbach Paper Co.

Sacramento—L. J. Doherty, Zellerbach Paper Co.

Salt Lake City—W. G. Lambert, Zellerbach Paper Co.

San Francisco—Mr. and Mrs. O. W. Mielke and Mr. and Mrs. A. W. Towne,



# Snaps at Del Monte



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Blake, Moffitt & Towne; C. H. Beckwith, Carter, Rice & Co. Corp.; Mr. and Mrs. E. A. Breyman, Mr. and Mrs. Victor E. Hecht; Mr. and Mrs. Frank C. Stratford, Mr. and Mrs. Harold L. Zellerbach and T. J. Finerty, Zellerbach Paper Co.

Seattle—J. W. Thompson, Blake, Moffitt & Towne; Mr. and Mrs. A. W. Akers, Zellerbach Paper Co.

Spokane—Mr. and Mrs. A. C. Mohn, Zellerbach Paper Co.

Tacoma—Mr. and Mrs. F. E. Jeffries, Tacoma Paper & Stationery Co.

### Visitors

Harry B. Todd, Zellerbach Paper Co., Chicago; Mr. and Mrs. J. Warner, Paterson Co., Ltd., Honolulu and Stanley Taylor, Honolulu Paper Co., Honolulu.

### Secretaries

W. B. Reynolds, Los Angeles; R. R. Morris, Portland; H. Arthur Dunn, Jr., and Mrs. Dunn, San Francisco, and W. P. Uhlmann and Mrs. Uhlmann, Seattle.

### Manufacturers

C. J. Allair, San Francisco, A. P. W. Paper Co.; William L. Shattuck and Mrs. P. W. Shattuck, San Francisco, Adhesive Products Co.; W. J. McCormick, San Francisco, American Writing Paper Co.; Neil L. Brinker, Los Angeles, paper mill representative; Earl Van Pool, San Francisco, Brown Company; Mr. and Mrs. George L. McNamara, Capital Envelope Co., Los Angeles.

Louis Bloch, Mr. and Mrs. G. J. Ticoulat, H. A. Goedje, and Mr. and Mrs. R. A. McDonald, San Francisco; Lester E. Remmers, Los Angeles, and Mr. and Mrs. F. N. Youngman, Portland, Crown Willamette Paper Co.

I. Zellerbach, San Francisco, Crown Zellerbach Corporation; Paul R. Raab, Los Angeles, Crystal Paper Service Co.; Hugh Wallace, San Francisco, Dill & Collins, Inc.; Mr. and Mrs. J. L. Murray, Miss Eleanor Murray and Mr. and Mrs. R. A. Gates, San Francisco.

W. J. Pilz, Everett, and Mr. and Mrs. A. A. Ernst, Los Angeles, Everett Pulp & Paper Co.; Mr. and Mrs. C. E. Swick, San Francisco, and F. B. Philbrook, Los Angeles, Graham Paper Co.; Fred W. Cole, Chicago, Fraser Industries, Inc.; Ross A. Fife, New York Gummed Industries Association.

Mr. and Mrs. John H. Smith, Oregon City, and A. J. McKnight, San Francisco, Hawley Pulp & Paper Co.; S. R. Whiting, Los Angeles, and Chester A. Buckland, Millwood, Wn., Inland Empire Paper Co.; Mr. and Mrs. B. P. Jaggard and Mr. and Mrs. J. F. Weunschel,

San Francisco, Grays Harbor Corporation and Hammermill Paper Co.

Charles Merchant, San Francisco, Johnson-Locke Mercantile Co.; C. A. Buskirk, San Francisco, Kalamazoo Vegetable Parchment Co.; P. C. Jones, Los Angeles, Keith Paper Co.; Mr. and Mrs. C. Francis Jenkins, Los Angeles, Kimberly Clark Corp.; Mr. and Mrs. V. N. Savale, San Francisco, Geo. La Monte & Son.

L. C. Peabody, Longview, Longview Fibre Co.; J. E. Nail, San Francisco, Nils Teren, Portland, Columbia River Paper Mills; Herb Rosenfeld, Los Angeles, Los Angeles Bag Co.; Neil B. Sinclair, Los Angeles, Nashua Gummed & Coated Paper Co.; Mr. and Mrs. George R. Davis and Mr. and Mrs. Joseph S. Fairchild, San Francisco, Pacific Coast Envelope Co. Div.

## Wieman Wins Golf Tournament

GEORGE C. WIEMAN of the Los Angeles office of the Western Waxed Paper Co., won the golf championship at the Del Monte convention this year of the Pacific States Paper Trade Association and took home with him the beautiful silver pitcher which goes each year to the winner.

This was the 19th annual golf tournament staged by paper manufacturers of the Pacific Coast and western representatives of eastern mills. Each year the mill men put on the golf meeting in connection with the convention of the paper trade.

Other winners, prizes and donors were:

Class A—Gentlemen: Winner, William E. Taverner, traveling bag donated by Everett Pulp & Paper Co. Runner-up, Chris Allair, liquor set donated by Graham Paper Co.

Class B—Gentlemen: Winner, C. L. Shorno, toilet kit from Western Waxed Paper Co. Runner-up, L. M. Simpson, cocktail set donated by Crown Willamette Paper Co.

Best net for 18 holes: Winner, H. A. Goedje, ice bowl and tongs from Longview Fibre Co. Runner-up, Andrew Christ, Jr., bowl from Geo. La Monte & Son.

Approach and putting contest: Winner, Charles Spies, plates from Inland Empire Paper Co.

Putting contest: Philo K. Holland, cocktail set from Northwest Paper Co.

Phillip L. Isler, San Francisco, Paper & Bag Institute of the Pacific Coast; Mr. and Mrs. W. J. Gray, Paterson Pacific Parchment Co.; Marvin Vanderheider, Hollywood, Patten Paper Co.; L. M. Simpson and Arthur E. Carlson, Los Angeles, Pioneer Division Flintkote Co.

Howard B. Ruweler, San Francisco, Union Bag & Paper Corp.; Mr. and Mrs. Frank N. Gladden, Los Angeles, Southern Kraft Corp.; T. C. Macormack, San Francisco, Strathmore Paper Co.; Hays Rehm, Salem, Ore., Western Paper Converting Co.

Andrew Christ, Jr., Oakland, George C. Wieman, Los Angeles, and A. S. Hammond, North Portland, Western Waxed Paper Co.; William Pickering, San Francisco, Cellophane Division, E. I. du Pont de Nemours & Co.; and Fred P. Whiteley, Chicago, Howard Paper Co.

Blind Bogey: Winner, R. A. McDonald, traveling bag from Pacific Coast Envelope Co. Div. Runner-up, Frank R. Philbrook, roulette wheel from Dill & Collins, Inc.

### Ladies' Tournament

Winner, Mrs. J. D. Zellerbach, silver tray from The Paterson Parchment Paper Co. Runner-up, Mrs. A. B. Saroni, candlesticks from Grays Harbor Corporation.

Best net for nine holes: Winner, Mrs. C. L. Shorno, evening bag from Hawley Pulp & Paper Co. Runner-up, Mrs. E. A. Breyman, clock from Southern Kraft Corp.

Putting contest: Winner, Mrs. F. C. Shaneman, coffee set from the Brown Company. Runner-up, Mrs. G. J. Ticoulat, smoking set from the Union Bag & Paper Co.

Mixed two-ball foursome: Winners, Mrs. F. N. Youngman and J. C. Perrin, plates from Columbia River Paper Mills. Runner-up, Mrs. W. F. Goodman and W. L. Shattuck, compote from Fibre-board Products, Inc.

Blind bogey: Mrs. R. A. Gates, perfume bottles from Los Angeles Bag Co.

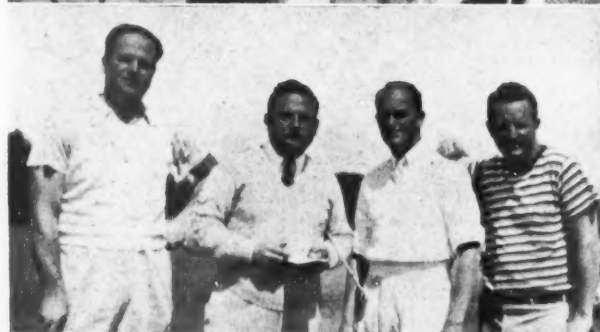
In charge of the golf was a veteran committee made up of G. J. Ticoulat, chairman; M. M. Baruh, Andrew Christ, Jr., W. J. Gray and Augustus Johnson.

In addition to the golf, there was a bridge tournament for the ladies and this was won by Mrs. W. J. Gray.

ON THE OPPOSITE PAGE—Top row: John H. Smith, Vice-President & General Manager, Hawley Pulp & Paper Company, Oregon City; W. D. McWaters, Manager, Zellerbach Paper Company, Portland; W. J. Gray, Pacific Coast Manager, Paterson Parchment Paper Company, San Francisco; Frank Stratford, Zellerbach Paper Company, San Francisco; C. Francis Jenkins, Kimberly-Clark Corporation, Los Angeles; Miss Hildegard Wahl, Association Secretary. Second row: J. W. Thompson, Manager, Blake, Moffitt & Towne, Seattle; Mr. and Mrs. J. W. Warren; A. Morris Sides.

Arthur E. Carlson, Purchasing Agent, Pioneer Division Flintkote Company, Los Angeles; George Houk, Hooker Electrochemical Company, Tacoma. Third row: H. Arthur Dunn, Jr., San Francisco; C. Francis Jenkins, Kimberly Clark Corporation, Los Angeles; W. B. Reynolds, Los Angeles; S. R. Whiting, Inland Empire Paper Company, Los Angeles; J. F. Weunschel, Sales Manager, Grays Harbor Corporation, Hoquiam; Mrs. Philo Holland, Los Angeles; I. Zellerbach, President, Crown Zellerbach Corporation, San Francisco; Mrs. Weunschel.

J. L. Murray, Sales Manager, Everett Pulp & Paper Company, San Francisco. Fourth row: Fred P. Whiteley, Western Sales Manager, Howard Paper Company of Chicago; Phillip L. Isler, Paper & Bag Institute of the Pacific Coast, San Francisco; Hugh Wallace, Dill & Collins, Inc., San Francisco; B. P. Jaggard, Grays Harbor Corporation, San Francisco. Fifth row: Richard J. Elkus; C. H. Beckwith, Carter, Rice & Company Corporation, San Francisco. Arthur Towne, Blake, Moffitt & Towne, San Francisco; Norman A. Buist; Fred W. Cole, Fraser Industries, Inc., Chicago; W. J. Pilz, Vice President & General Manager, Everett Pulp & Paper Company, Everett. Sixth row: C. E. Swick, Graham Paper Company, San Francisco; Wm. G. Lambert, Zellerbach Paper Company, Salt Lake City; Wm. P. Uhlmann, Seattle; C. L. Shorno, Blake Moffitt & Towne, Portland; V. N. Savale, George La Monte & Son, San Francisco.

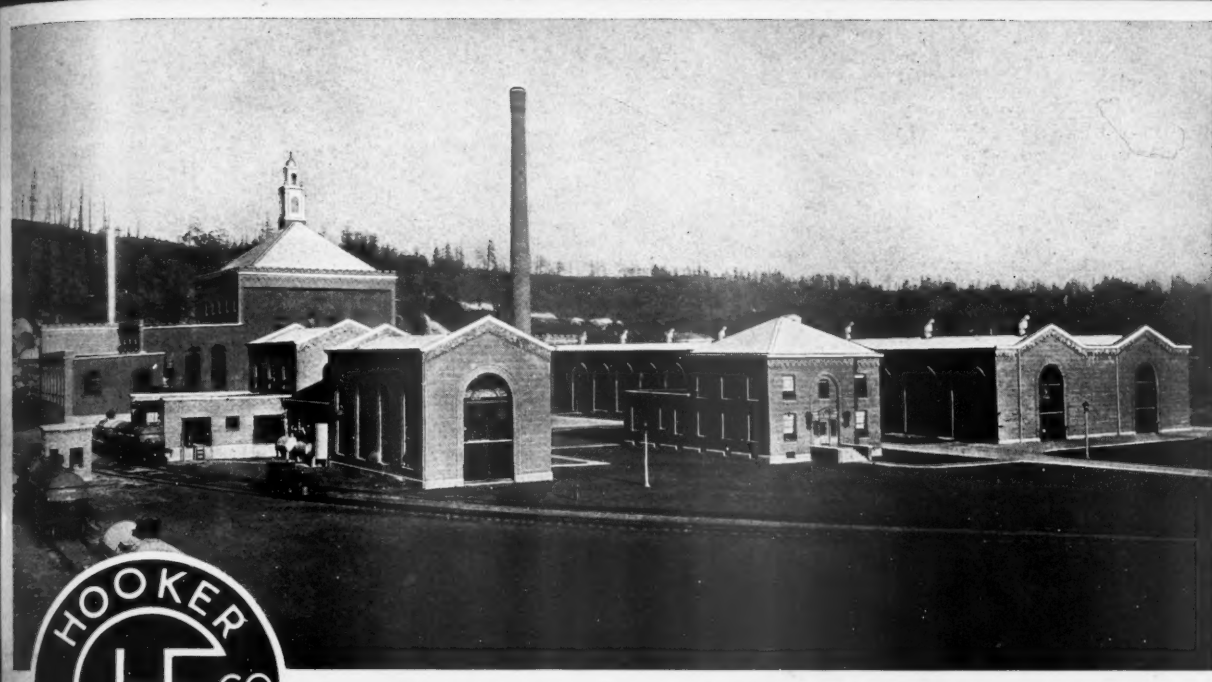


ABOVE—Top Row: Nils Teren, vice-president and general manager of Columbia River Paper Mills, Oregon Pulp & Paper Company and the California-Oregon Paper Mills; Frank Youngman of Crown Willamette Paper Company, Division of Crown Zellerbach Corporation; R. A. McDonald of Crown Willamette Paper Company, Division of Crown Zellerbach Corporation; G. J. Allair, A. P. W. Paper Company, San Francisco; Peter Hay; William L. Shattuck, Adhesive Products Company, San Francisco. Second row: G. J. Ticoulat, Crown Willamette Paper Company, Division Crown Zellerbach Corporation, San Francisco; George C. Wieman, Western Waxed Paper Company, Los Angeles; W. E. Taverner, Taverner & Fricke, Los Angeles; Stanley Taylor, Honolulu Paper Company, Honolulu.

N. L. Brinker, Paper Mill Representative, Los Angeles; Neil B. Sinclair, Nashua Gummed & Coated Paper Company, Los Angeles; L. E. Remmers, Crown Willamette Paper Company, Division of Crown Zellerbach Corporation, Los Angeles; Arthur E. Carlson, Purchasing Agent, Pioneer Division, Flintkote Company, Los Angeles. Third row: William Pickering, Cellophane Division, E. I. du Pont de Nemours & Company, San Francisco; W. J. McCormick, American Writing Paper Co., San Francisco; P. C. Jones, Keith Paper Co., Los Angeles; E. A. Breyman, Zellerbach Paper Company, San Francisco; Philo K. Holland, manager, Zellerbach Paper Company, Los Angeles.

Harry B. Todd, Zellerbach Paper Company, Chicago. Fourth row: Herb Rosenfeld, Los Angeles Bag Company, Los Angeles; Charles Merchant, Johnson-Locke Mercantile Company, San Francisco; Mr. and Mrs. George R. Davis, Pacific Coast Envelope Division, San Francisco. Fifth row: George Wieman, Western Waxed Paper Company, Los Angeles; W. F. Goodman, Andrew Christ, Jr., Oakland; F. E. Jeffries, President, Tacoma Paper & Stationery Company, Tacoma; Fred C. Shaneman, Manager, Pennsylvania Salt Manufacturing Company of Washington, Tacoma.





# CAUSTIC SODA LIQUID CHLORINE FOR THE NORTHWEST

Appreciating the diversified uses of Caustic Soda and Liquid Chlorine, the Hooker Company offers the technical services of an experienced engineering staff. Mills in the east and south as well as the west have used Hooker service to help solve their operating problems. At Tacoma, Washington, are maintained plant, laboratories, field staff and administrative personnel to serve west coast industries.

WESTERN PLANT, Tacoma, Washington  
Western Sales Office, Tacoma, Washington

EASTERN PLANT, Niagara Falls, N. Y.  
Eastern Sales Office, 60 East 42nd St., New York

## **HOOKER ELECTROCHEMICAL COMPANY**

*Source of Chlorine for St. Regis Kraft Company and other paper mills*

MURIATIC ACID - BLEACHING POWDER - MONOCHLOROBENZENE - PARADICHLOROBENZENE  
BENZOATE OF SODA - BENZOIC ACID - BENZOYL CHLORIDE - BENZYL ALCOHOL  
SULFUR MONOCHLORIDE - SULFUR DICHLORIDE - SULFURYL CHLORIDE - SALT  
FERRIC CHLORIDE - ANTIMONY CHLORIDE



*Western Frame BJV 8  
Agitator Drive 150  
H.P., 25 R.P.M. Out-  
put Speed. Vertical  
Low Speed Shaft.*

# Big

OR LITTLE



*Western Agitator Drive, shown above, on 50-ton Blending Tank  
stalled in St. Regis Kraft Co.'s Mill, Tacoma, Wash. Unit de-  
take extreme thrusts and radial load of heavy duty agitator*

# WESTERN GEAR SPEED REDUCERS



*Motorized Vertical Speed Reducer Frame SV 49; 3  
H.P., 150 R.P.M. Output Speed. Installed in St. Regis  
Kraft Company's Mill, Tacoma, Wash.*

**"Gear Products  
From Gear Specialists"**

**WITH PROMPT AND  
RELIABLE SERVICE**

**For EVERY DRIVE  
REQUIRED IN  
PULP and PAPER MILLS**

Pacific Coast pulp and paper mills have been using  
WESTERN SPEED REDUCERS for years. They have  
found WESTERN units operate with smooth, trouble-  
proof efficiency year after year under the most severe  
conditions.

**REMEMBER WE CAN MAKE ALL  
TYPES OF REPLACEMENT GEARS**

**Western Gear Works**

SEATTLE, WASH.

Associated with **PACIFIC GEAR & TOOL WORKS**

SAN FRANCISCO PORTLAND



EL PASO

LOS ANGELES

# Wood Utilization Research At Idaho

Wood Conversion Laboratory at University of Idaho  
Offers Graduate Work in Wood Utilization—  
Undergraduate Curriculum Gives Broad Training in  
Physical Sciences, Mathematics, Engineering  
and Technology of Wood

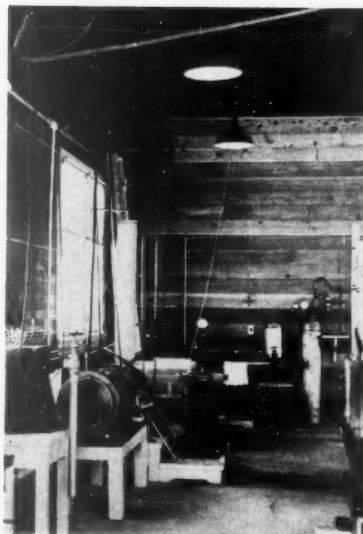
Among the foremost of the natural resources of the State of Idaho is timber. The largest industrial payroll of the state is in the wood industries, and about two-fifths of the area of the state is forest land. Fully recognizing the importance of wood to the state, the University of Idaho, Moscow, Idaho, established a laboratory in 1931 devoted entirely to research in the technology and chemistry of wood. The equipment of the laboratory has been undergoing a continual and gradual expansion since its establishment to keep up with the developing research program.

The Wood Conversion Laboratory is a unit of the Idaho School of Forestry. Dr. D. S. Jeffers is Dean of the School of Forestry and Dr. Edwin C. Jahn is in charge of the laboratory and directs its research program. The Wood Conversion Laboratory is the only university laboratory devoted exclusively to chemical and technological research in wood west of the Mississippi.

The laboratory is housed in a simple one-story rectangular frame building, sturdily built with special reinforced construction so that it is practically vibrationless when motors and shafts are running. The building contains two large laboratory rooms and an office, 1000,

820, and 170 square feet, respectively. The floors of the laboratory rooms are of concrete with center drains. The walls and ceilings are finished with larch and Douglas fir with a natural oil finish.

One-half of the large laboratory room is devoted to heavy equipment powered by a 5 h.p. motor and shaft. The remainder of this room and part of the other room are devoted to chemical laboratory benches, work bench, fume chamber, constant humidity chamber, balance table, pulp testing and other testing equipment, and storage cupboards. The autoclave equipment includes one upright iron vessel of one-half cubic foot capacity which is fitted with a vacuum and pressure pump and may be heated by direct or indirect steam or gas, a rotary iron digester of one cubic foot capacity, and an 800 cubic centimeter chrome-nickel-steel autoclave together with a constant temperature controlled bath. Included among the other pieces of larger equipment are a 12x24-inch stainless steel rod mill, a Valley pulp screen, a 12x12-inch special fiber board or sheet machine, pulp disintegrator, hand screw press, molds for plastic studies, Wiley wood flour mill, a Beach-Russ vacuum-pressure pump, and an Elmes hydraulic press of 30 tons capacity.

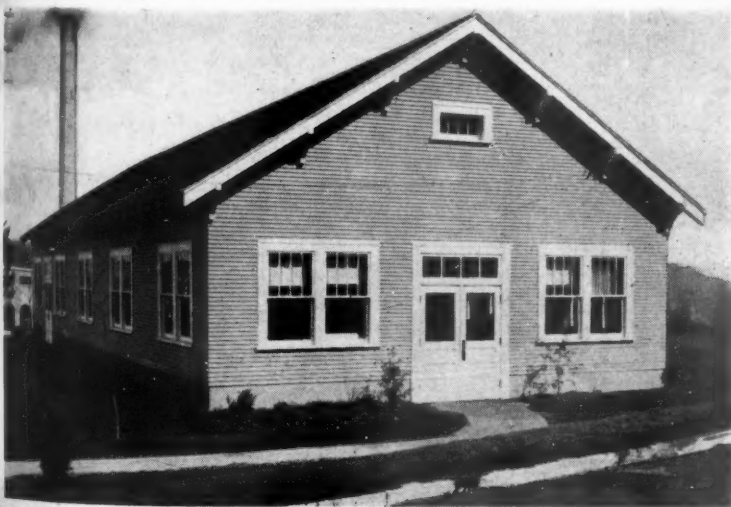


**The Idaho Wood Conversion Laboratory has the necessary equipment for chemical and technological research in wood**

Special testing equipment includes a Forest Products Laboratory fire-resistance tester, static bending and hardness testers for fiber boards and plastics, a British standard pulp sheet machine, and various pulp testing equipment. A microtome and other equipment for studying the anatomy and technology of wood are also housed in this laboratory.

The research program of the laboratory includes studies on pulping Idaho species and sawmill wastes for structural materials and papers; production of strong structural fiber boards; fire proofing fiber boards; chemistry and utilization of arabogalactan, a carbohydrate in western larch wood; the coalescence and plasticization of wood particles (sawmill wastes); and the measurement of the degree of gelatinization of cellulose and wood.

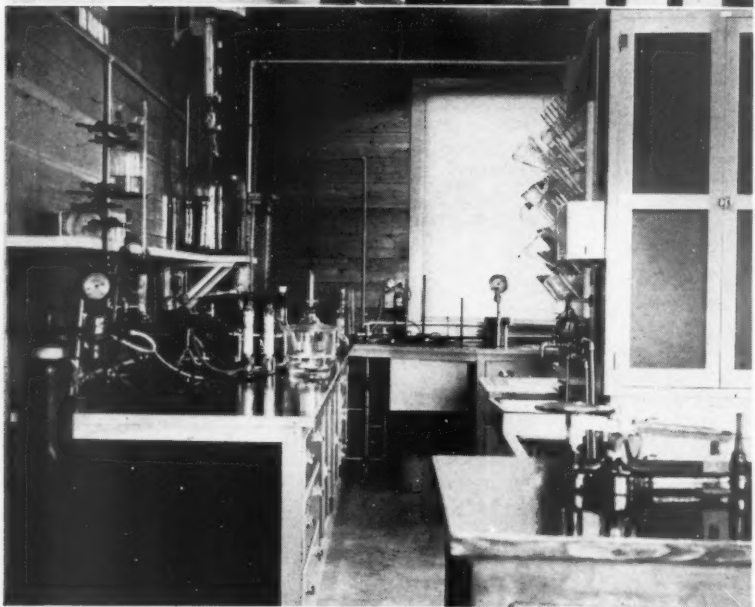
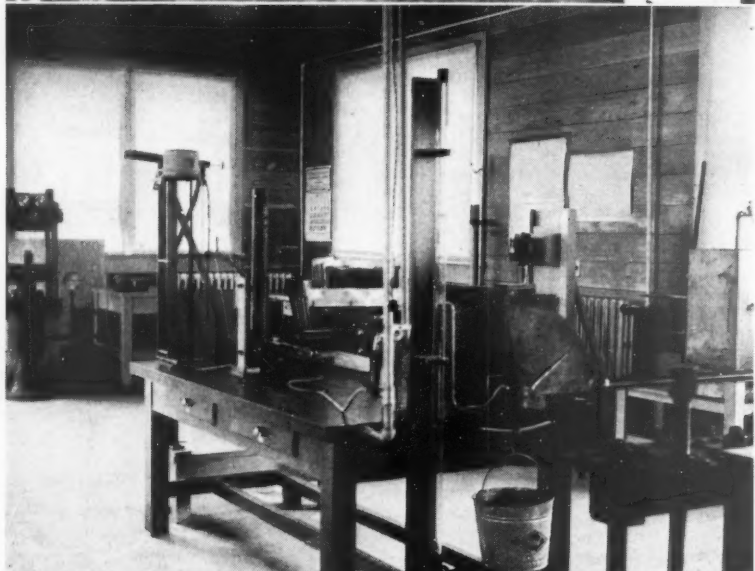
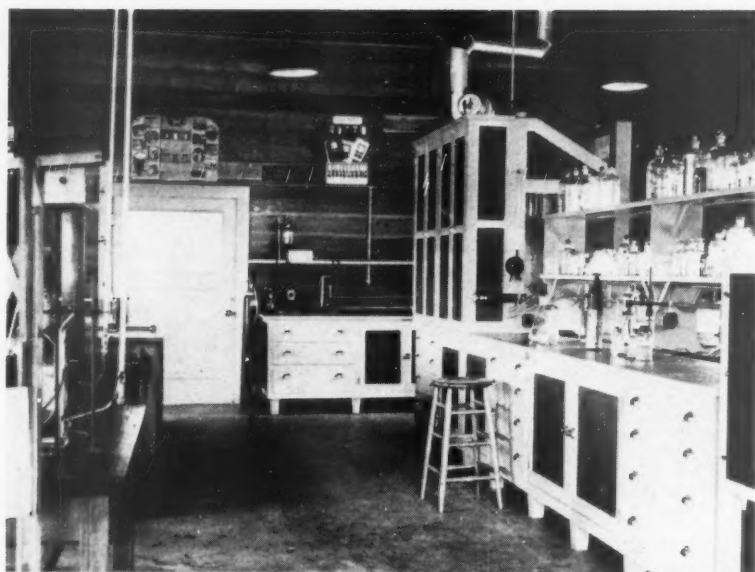
Potlatch Forests, Inc., of Lewiston, Idaho, a division of the Weyerhaeuser Timber Company, has sponsored work at the Wood Conversion Laboratory for the past three years by granting, each year, two fellowships, amounting to four hundred dollars each. This company, through Mr. C. L. Billings, general manager, has just renewed these fellowships for next year. The work sponsored by Potlatch



**THE WOOD CONVERSION LABORATORY**

of the Idaho School of Forestry, University of Idaho, Moscow, Idaho » » » Dr. Edwin C. Jahn is in charge of the laboratory and the research program.





Forests deals with investigations on the plasticization and coalescence of wood particles for the development of useful products from sawmill wastes. Research at Idaho has shown that wood may be molded into various shapes by several different treatments with the formation of hard, dense products. A wide variation in properties is obtained by the different processes used.

This year the Technical Association of the Pulp and Paper Industry approved a research grant of six hundred dollars to the Idaho School of Forestry for investigating a method for measuring the degree of gelatinization of cellulose and wood. This research involves work of a fundamental nature on the cellulose-water relationships of beaten fibers and the application of the data obtained to developing a test method giving an indication of the beating degree. A preliminary paper on this subject appeared in the June, 1936, issue of Pacific Pulp and Paper Industry.

Allied to the research program in wood utilization is the training in this field being offered to undergraduates by the Idaho School of Forestry. A curriculum in Wood Utilization Technology was set up two years ago for training students for work in the wood industries. The curriculum is based on a fundamental foundation in the physical sciences, mathematics, engineering, and the technology of wood. Suitable electives permit the student to prepare for work in the chemical wood industries or the lumber industry. Ten weeks of practical work in a wood industry during the summer is required as part of this curriculum.

### Training Men for Wood Industries

The lumber journals, pulp and paper journals, and men in the industry, have frequently voiced the opinion that there is lack of an adequate fundamental training in most of our Universities for men wishing to prepare for work in the wood industries. That there is need for such a professional training is ready agreed upon by most industrial and technical men and by many University people. Yet the development of such a curriculum which will enable a student to obtain the fundamentals for wood industrial work has been slow.

In general a student who wishes to prepare himself for service in a wood industry as a technician, investigator, or administrator in plant operation and mill control work should have basis training in a combination of subjects which it is practically impossible to secure in any of the standard professional curricula such as mechanical engineering, chemical engineering, or forestry. To fill this need, a specially arranged curriculum is desirable. Such a curriculum should be based upon a fundamental foundation in mathematics, physics, chemistry, engineering, and the technology of wood. It should also provide for an understanding and appreciation of the problems of managing and harvesting the raw material and of the economics and business of an industrial enterprise.

With this basic outline as a criterion,

**Three views of the well equipped Wood Conversion Laboratory of the Idaho School of Forestry, University of Idaho**

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the Idaho School of Forestry, after a thorough study of the subject two years ago, organized a curriculum in "Wood Utilization Technology." Since fields other than wood technology and forestry are encompassed, the aid and co-operation of other University divisions concerned were enlisted and gladly given in organizing this curriculum.

The foremost intent of this curriculum is to give the student a broad foundation in those subjects which will enable him not only to master the technics of operation after he has worked for a time in the plant, but also to understand the principles underlying all the various operations. Such a man will not only be a better operator, but may in time become a good plant coordinator or a development man. Most of our industries which have employed technically trained men for some time are cognizant of this truth. They say, in effect, "We want the Universities to give a man a sound fundamental training and we prefer to teach him the actual practices and tricks of operation." However, the practical industrial aspects are not lost sight of in this curriculum, but are brought out in special utilization courses and through required summer work in the industry.

An attempt has been made to organize a closely knit curriculum of well coordinated courses. The group of wood tech-

nology subjects forms the central pillar of the curriculum with the physical sciences and engineering as strong supporting arches. The forestry, economics and business groups are also integral parts of the structure, and, of course, English and general biological sciences are basic cultural subjects. The outline of the curriculum shows the classification of the subject matter included.

The wood technology subjects occur only in the junior and senior years. They are organized as advanced technical subjects, requiring most of the physical science and engineering subjects, as well as some of the forestry courses, as prerequisites. The scope of these subjects is indicated in the outline of the curriculum.

A knowledge of the raw material and the problems and policies affecting its management and harvesting are covered in the forestry subjects. A study of the characters, classification and identification of trees, the measurement of forest products, timber estimating, log scaling and logging methods, and of forest economics, policies and administration is required. Actual field practice and woods experience is gained in the ten weeks of summer study in the forest following the sophomore year.

Electives contribute about half the work of the senior year. Students desir-

ing to enter the pulp and paper or other chemical industry must elect organic chemistry and physical chemistry or chemical engineering. Students preparing for the lumber or allied industries must elect more engineering, wood technology, and business subjects.

In order that the student may gain the industrial viewpoint and integrate his college training with actual plan operation, ten weeks of practical summer work in the industry is required following the junior year. Many men in the industry heartily approve of this scheme for it should work to the ultimate, mutual advantage of both the industry and the student. No "made" job is expected to be given these students, but they are to take any work in the plant which the industry may offer and work at the regular labor wage. A report on the summer work is required of each student.

It is proposed to limit the enrollment to relatively few men, i.e., not over five or six for each year. By so doing, it is hoped that only a small selected group of well-trained men may be graduated each year.

Perfection is not claimed for this curriculum. It is just getting started and many modifications may be found desirable. We shall always be very appreciative of any suggestions or criticisms from men in the industry.

## University of Idaho Curriculum in Wood Utilization Technology

(17 Credits)

Wood Technology  
Anatomy  
Properties  
Identification  
Wood Industries  
Production and Uses  
Principles and Manufacture  
Wood Products Pathology  
Logging  
Utilization Technology I  
Introduction to Wood  
Chemistry  
Chemical Utilization  
Utilization Technology II  
Mechanical Properties and  
Timber Stresses  
Gluing and Glued Wood  
Construction  
Seasoning  
Preservation  
Technology of Manufacturing  
Processes  
Summer Work in Industry

### Physical Sciences

(42 Credits)

General Mathematics  
Algebra  
Trigonometry  
Analytical Geometry  
Calculus  
General Chemistry  
Qualitative Chemistry  
Quantitative Chemistry  
Engineering Physics

### Economics & Business

(15 Credits)

Principles of Economics  
Forest Economics  
Accounting

### English & Biology

(15 Credits)

Composition  
Botany  
Zoology

### Engineering

(24 Credits)

Engineering Drawing  
Descriptive Geometry  
D. C. & A. C. Machinery  
Thermodynamics  
Steam Laboratory  
Statics  
Dynamics  
Mechanics of Materials  
Materials Testing

### Forestry

(17 Credits)

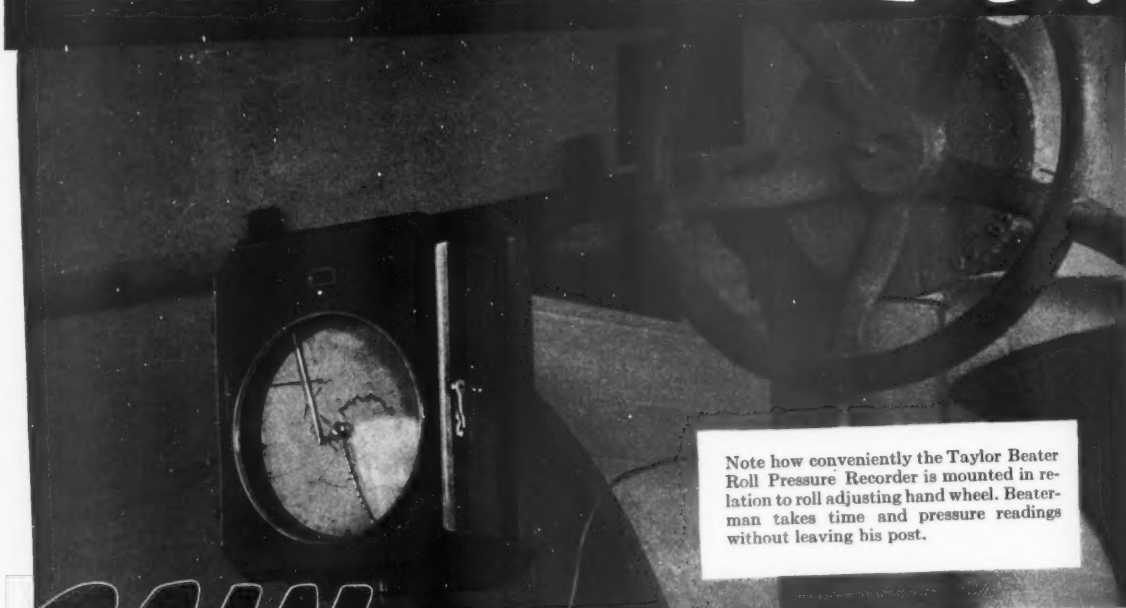
Introduction to  
Forestry  
Surveying  
Mensuration  
Forest Communities  
Dendrology  
Forest Policy &  
Administration  
Ten Weeks in Summer Camp

### Electives

(16-18 Credits)

For Lumber and Allied Industries:  
Utilization Studies  
Mechanical Engineering  
Business  
For Pulp and Paper and Chemical Industries:  
Organic Chemistry  
Physical Chemistry  
Chemical Engineering

# SAVE on beating time and power consumption 9.5%



Note how conveniently the Taylor Beater Roll Pressure Recorder is mounted in relation to roll adjusting hand wheel. Beaterman takes time and pressure readings without leaving his post.

## GAIN in increased beating capacity . . . lower expense . . . . more uniform finished sheets

"WE INSTALLED the Taylor Beater Roll Pressure Recorder two years ago.

"Our beating time dropped immediately almost 10%. And the beating capacity of our mill increased by the same amount—without any expense for additional equipment.

"Our operators were able to adjust the beater roll to a definite pressure schedule best suited to the quality of the pulp. By thus eliminating excessive roll pressure, we reduced power consumption 9% per ton.

"The dollar savings in power cost have long since paid for the installation.

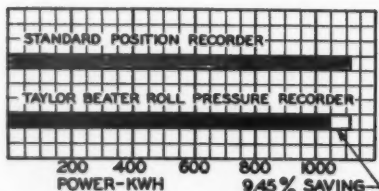
These savings are now added regularly to our profits."

Such is the experience of mill men using this instrument. Up-to-date plants in the past two years have proved the value of the Taylor Beater Roll Pressure Recorder in increasing output, improving finished stock and raising profits.

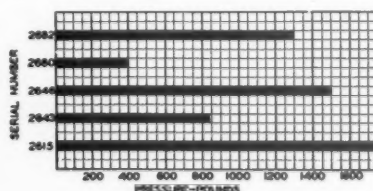
Variations in pressure-time schedules are costly. You pay for them in wasted time, wasted power and in the unstable quality of the finished sheet. With the Taylor Recorder, you can eliminate these expensive variables and get a more uniform product at lower cost.

Let Taylor engineers bring you this accuracy and this economy, and assure you of consistent high quality in your finished paper. Get the full story of the Taylor Beater Roll Pressure Recorder. Ask for Special Bulletin 98104. See a Taylor representative or write to Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada. Manufacturers in Great Britain—Short & Mason, Ltd., London, England.

Pacific Coast Sales Offices—141 Mission St., San Francisco, Cal., and Central Bldg., Los Angeles. Also Terminal Sales Bldg., Portland, Oregon. Complete repair facilities for all Taylor Instruments are now available in San Francisco.



Comparison of power consumed on 35 beating cycles with roll adjusted by aid of standard roll position recorder, and 35 adjusted the Taylor way. Note that Taylor Recorder saved 9.45% in power by avoiding excessive roll pressures.



The same roll adjustment at the beginning of 5 beating cycles produced these wide variations in roll pressures because of normal variations in the consistency of each "furnish." Pressures measured by Taylor Beater Roll Pressure Recorder.

# Taylor

Indicating / Recording Controlling

TEMPERATURE, PRESSURE and FLOW INSTRUMENTS



# Trade Talk



of Those Who Sell Paper in the Western States

## R. C. Clark to Establish Own Paper Firm

R. C. (Budge) Clark, formerly with the Zellerbach Paper Co., has resigned as sales manager of the Graham Paper Company of St. Louis, Missouri, to form his own paper company with headquarters in San Francisco.

The resignation, effective June 30, was announced by M. J. Collins, president of the Graham company, as follows:

"We are sorry to announce that R. C. Clark is leaving the Graham Paper Co. to engage in the paper business on the Pacific Coast, where he has spent all of his life. Mr. Clark came to us a year and a half ago with paper experience and a knowledge of selling that has proved very valuable in promoting sales and developing men. We regret to lose the services of Mr. 'Budge' Clark, but wish him well in his new venture."

Before going with Graham, Mr. Clark was connected with the sales department on the headquarters staff of the Zellerbach company at San Francisco. During his service of approximately twenty years with Zellerbach, he served as manager of the Fresno division, sales manager of the Los Angeles division and did field work at other division points.

Mr. Clark is a son of the late E. D. Clark, for years manager for Zellerbach at Fresno, and who spent more than forty years in the distribution of paper.

Upon completing his work with the Graham Paper Company on June 30th, Mr. Clark will spend two or three months

visiting paper making regions in this country, officially opening his new paper business in San Francisco about the middle of September.



**R. C. CLARK**  
Returns to Pacific Coast

## Silklin Succeeds Glass Sales

W. F. Goodman, president of the Glass Sales Agency, Inc., announced the latter part of May that his firm would henceforth be known as Silklin Paper Corporation. The name was adopted as one appropriately descriptive of the business. It was believed that the former name involving the use of the word, "Glass" was a misnomer. No change in offices or personnel is being made. The new name will be used in Oakland, Los Angeles and Seattle offices.

## Bruffy Appointed

T. E. Bruffy became southern California representative for the Dobeckman Co. May 20 when Chas. Jones left that position to become district manager in San Francisco. Mr. Bruffy had been in the Los Angeles office since the early part of the year.

## More Paper Fewer Boxes

Victoria Paper Box Company, Victoria, is now concentrating on the handling of paper products rather than paper boxes, although the latter still represent an important part of the company's output.

Manager Bert Challoner reports a falling-off in demand for egg carton fillers for which his company once had an excellent market, enjoying virtually a monopoly in Western Canada. This is said to be due to the fact that prairie farmers are raising more poultry and the prairies do not depend on British Columbia to such an extent as formerly for their egg supply.

## Swain to Adams, Mass.

Roy A. Swain, western representative of the L. L. Brown Paper Co., with headquarters in Los Angeles, is consolidating a trip through the western territory with a visit to the mill at Adams, Massachusetts. He will return in July.

## Buel Drives to Guaymas

R. H. Buel of Buel Towne Co., San Diego, accompanied by two friends, drove to Guaymas in Sonora, Mexico, by way of Hermosillo. Although the trio did a bit of fishing, no definite report was available regarding the catch made at this fisherman's paradise. Mr. Buel reported the people were most hospitable and the country very beautiful. The only unpleasant feature of the trip was the difficulty the party had in finding sufficient gasoline outlets along the highway.

## Sherman Paper Has New Home

The Sherman Paper Products Co. of Los Angeles has moved to new and larger quarters at 1646 N. Spring Street. According to A. T. Flynn, manager of the firm, the new location will provide an area of 18,000 square feet for factory and offices, a doubling of the space available at the former site. Several pieces of new machinery will be added to the present equipment in the near future.

## Edward Smith Moves Office

Edward N. Smith, well known paper mill representative of Los Angeles, recently moved his offices and warehouse stocks to 820 McGary Street. The new location provides much larger quarters and better handling facilities.

## Chan Paper Company

Howard Chan Paper Co. is one of several Chinese firms selling paper and allied products to the Oriental residents of San Francisco. The Chan firm is at 1149 Powell St., buys largely from the St. Helens mill and sells largely shirt boards and wrapping paper to Chinese laundries. Chan has been in business about a year.

## Ranck

## Around the World

Z. W. Ranck, president of the Crystal Tissue Company of Middletown, Ohio, arrived at Los Angeles May 15 on one of the Cunard liners on the last leg of a round the world tour. Before leaving for New York via the Panama canal the following day, Mr. Ranck gave a party in Los Angeles in honor of Mr. and Mrs. Edward N. Smith.

## Petersen Manager B. M. & T. at San Jose

O. W. Mielke, San Francisco, general manager of Blake, Moffitt & Towne, announces appointment of Arthur W. Petersen as manager of the firm's San Jose division. Petersen has been 18 years in the paper jobbing business, having started in Sacramento and joining Blake, Moffitt & Towne in Oakland in 1930.

F. L. Unthank, manager of the Oakland division, presided at a farewell dinner given Petersen, April 26. Mr. Mielke attended and told of his recent trip through China.

Blake, Moffitt & Towne's San Jose division was opened in 1928. Petersen succeeds W. E. Stephenson as manager. Mr. Stephenson resigned to go into other activity.



**A. W. PETERSEN**  
Manager San Jose Division  
Blake, Moffitt & Towne

## Knott Visits Southwest

Harold R. Knott, Chicago manager of the Eastern Manufacturing Co., Portland, Maine, paid his semi-annual visit to his customers in the southwestern area during the month of May.

## Los Angeles Paper Mill Men Meet

Committee chairmen for the coming Third Annual Hi-Jinks sponsored by the Los Angeles Paper Mill Men's Club were announced at the meeting of the group held June 3, at the Nikabob Cafe, Los Angeles. This was the first meeting held under the leadership of the new president, Neil B. Sinclair, an April luncheon meeting and a May evening meeting having been missed since Mr. Sinclair's election to office.

The newly appointed chairmen, whose committees will be selected and announced next month, are Lewis H. White of the California-Oregon Paper Mills, chairman of the general committee, Frank R. Philbrook of Graham Paper Co., chairman of the golf committee, Lester E. Remmers of the Crown Willamette

Paper Co., chairman of the entertainment committee, Wm. H. Heitman of the Northern Paper Mills, chairman of the finance committee, S. R. Whiting of the Inland Empire Paper Co., chairman of the printing and mailing of the program, and C. Francis Jenkins of the Kimberly Clark Corp., chairman of the promotion committee.

Guests introduced by President Sinclair at the dinner were Earl Van Poole, Pacific coast representative of the Brown Co., Wm. S. Shattuck, manager of the Adhesive Products Co., Geo. McCord, son of J. M. McCord of the California-Oregon Paper Mills and Frank L. Johnson, manager of the Pacific Coast Terminal Warehouse. President Sinclair then asked T. E. Bruffy who recently took Chas. Jones place with the Dobeckman Co. locally, P. E. Loer of the Veldown Co., Division of the International Paper & Power Co., and Roy Goode of Menasha Paper Products Co. to rise and identify themselves for the other members since they are among the newer members of the club.

Plans for the coming Hi-Jinks are in the process of formulation. It is probable the affair will be held the latter part of September. No place has been definitely selected although several are under consideration.

Forty-one men were in attendance at the June meeting. After a very fine dinner and the business of the club had been transacted "the usual after dinner sports prevailed."

## Production Ratios Hold at High Level

The monthly comparative summaries report of the American Paper & Pulp Association show a continued high level of paper production as compared with capacity. The first five months of 1937 have all been fractionally above 90 per cent with the exception April, which showed better than 92 per cent. The average for five months was 90.6 per cent in 1937.

In the first five months of the 1936, the ratios ranged from 76.1 per cent to 82.3 per cent, with an average of 78.8 per cent, 11.8 per cent lower than for the comparative period this year.

In the similar 1935 period the monthly summaries ratios ranged from a low of 65.8 per cent to a high of 70.5 per cent with an average of 69.14 per cent.

The average monthly production ration in the first five month of 1937 is 21.46 per cent higher than for the same period in 1935, and 9.66 per cent higher than in the identical 1936 period.

Paperboard operating ratios are likewise up over 1936 and 1935. During the first four months of 1937 "inch-hours" reported to the National Paperboard Association ranged from 80 per cent to 89 per cent of capacity with an average of 85.5 per cent. In the similar 1936 period the ratios varied from 61 to 70 per cent with an average of 66.5. The first four months of 1935 were almost identical in paperboard production with a range of 61 to 67 per cent and an average of 64 per cent.

The increase in the 1937 percentage over 1936 is 19 per cent and over 1935 by 21.5 per cent.

These operating to capacity ratios, while not entirely accurate mirror a reliable picture of the condition of the

American paper and paperboard industries, and likewise show clearly the reason for the strong pulp market existing in 1937.

## Dan Woodward Passes In Spokane

Dan M. Woodward, head of the paper department of John W. Graham & Company of Spokane, Washington, passed away June 8th at his home in that city. Heart trouble had kept him from active work since last November.

Mr. Woodward, who was born in Winona, Minnesota, in 1863, came to Spokane in 1896 and entered the employ of John W. Graham for whom he worked the rest of his life.

Mr. Graham, speaking of his friend, said, "His foresight, his integrity, and his wide friendships in the industry made him an invaluable employee."

Charles Kelly, secretary-manager of the Printing Trades Industry of Spokane, said of Mr. Woodward, "He was recognized as the leading authority on fine paper in the West. Few men in the industry had the wide acquaintance with and the confidence of paper manufacturers, printers and paper distributors that Mr. Woodward enjoyed. He had purchased more than a million dollars worth of paper in his career and was known and admired everywhere that paper men met. He was a gentleman of the old school whose word was his bond."

Mr. Woodward is survived by his widow, Grace Ellis Woodward, a son Doren; two daughters, Mrs. Lois Thoms of Spokane and Mrs. Rhoda M. Woodward of Salt Lake City; one grandson and two granddaughters, and one sister, Mrs. W. T. Nicholson of Carlisle, Iowa.

## No Solicitors Allowed

In the lobby of the Cunard Building, San Francisco, reads a sign: "No peddlers or solicitors allowed."

Yet up on the fifth floor, on a door reads a new sign: "W. J. McCormick, Solicitor for the American Writing Paper Co., Holyoke, Mass."

"Mac" says the change was made recently from "representative" to "solicitor" on orders from the home office and insists he is not an English barrister.

## General Noses Out Fibreboard

Los Angeles has an industrial soft ball league, two members of which are well known to the paper industry, Fibreboard Products, Inc., and General Paper Company. In a seven-inning game between these two companies' teams, May 25, General Paper Company came out winner after a hard fought battle, with final score 8 to 7. The game had particular fight to it inasmuch as the managers of both companies played on their teams. Lou Gronich of General Paper Company played first base and Cort Major of Fibreboard Products, Inc., played third base.

Clarence Twombly, manager of the General Paper team was at one time a member of the Chicago Nationals. Manager of the Fibreboard team is Dwight Tudor. A return engagement is being considered and it is believed this will be a faster and more furious game even than the first which was a good one.

## Shattuck Visits Los Angeles

Wm. S. Shattuck, manager of Adhesive Products Co., visited Los Angeles the first week in June.

**LEADING MANUFACTURERS** of patented paper and pulp mill equipment desires active sales representative for Pacific Coast territory. Must have knowledge of mill operation from engineering and technical standpoint. Give complete particulars in first letter. Box No. 13, care Pacific Pulp & Paper Industry, 71 Columbia, Seattle, Wash.

**WANTED**—Laboratory-strength, testing equipment consisting of: 1½-lb. Valley Niagara Experimental Beater, Sheet Mould 8"x8", Hydraulic Press, Mullen Tester, Elmendorf Tearing Tester, Freedom Tester. State age and condition of equipment, and price. Box 14, Pacific Pulp & Paper Industry, Seattle, Wash.

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IN  
**PORTLAND**  
**COMFORT and GOOD FOOD**  
**Hotel** 600 ROOMS  
*Sensible Rates*  
**MULTNOMAH**  
PORTLAND, OREGON

## REDDY KILOWATT

*Your Electrical Servant, Says:*



*"Sing a song of summer,  
happiness and glee:  
Forget about your dirty work;  
Leave it all to me."*

**PUGET SOUND POWER  
& LIGHT COMPANY**

*"To Best Serve the Public Interest"*

## St. Regis Pitcher Gets Yankee Tryout

William Schubel, seventeen year old St. Regis Kraft Company laboratory worker, also pitches on the St. Regis baseball team. A scout for the New York Yankees watched the opening game between Penn Salt and St. Regis, and promptly signed him up for a tryout with the Yankees next spring.

## Paterson Installs New Machine

Paterson Parchment Paper Co., San Francisco, has installed another 86-inch sheeting machine.

Business is very good with Paterson and its western subsidiary, reports Manager W. J. Gray.

Mr. Gray recently spent a vacation period on a trip to Death Valley, Palm Springs and other southern California points of interest.

## Van Poole Back From Hawaii

Earl Van Poole, Pacific coast representative of the Brown Co., returned recently from a business trip to the Hawaiian Islands. Mrs. Brown accompanied him on the trip. They visited while there all of the major islands including Hawaii, Maui, Oahu, Molokai and Kauai.

## Zellerbach Elected Tourist Director

Clarence E. Bean, president of the San Francisco Convention and Tourist Bureau, announced on June 7th, that Isador Zellerbach and George L. Love had been elected directors. Mr. Zellerbach is president of the Crown Zellerbach Corporation and Mr. Love is manager of the St. Francis Hotel.

Mr. Zellerbach in accepting the position said, "A metropolis the size of San Francisco is an enterprise of considerable financial overhead."

"Such an enterprise requires outside money constantly pouring in to maintain its healthy condition."

"One way of bringing new money into such a metropolis to carry its overhead and to prosper its citizens is the exploitation of such a metropolis for maximum tourist, convention and business show revenue."

## Northwest Lead Announces New Plant Opening

J. C. Lane of the Northwest Lead Company, announces the recent completion of the firm's new manufacturing plant and offices at 2700 16th Ave. S. W. (Harbor Island), Seattle. "This move," stated Mr. Lane, "was necessitated by the enlarging of the company's operations and the addition of several new lines of lead and lead-alloy products."

Known to the pulp and paper industry of the Northwest for the past twenty years as a supplier of high-grade pure and antimonial lead pipe, sheet lead, lead castings, etc., under the "Bunker Hill" trade name, this company also manufactures a general line of manufactured lead and lead-alloys for all purposes. Northwest Lead Company is an affiliate of the Bunker Hill mine and Bunker Hill smelter of Kellogg, Idaho, from which an exceptionally high quality virgin lead is supplied them.

Virtually all West Coast sulphite mills are users of Bunker Hill products, according to Mr. Lane, principally in the form of lead pipe and flues in acid plant and tower systems and in various acid handling operations, for service and sewer lines, lead fittings for stack lines, etc.

Of particular interest to mill operators has been the development, in the past three years, of a new lead alloy known as Tellurium-lead, which has proven exceptionally adaptable to the severe requirements of cooler work and other points of extreme service in acid and gas handling. The tellurium-lead alloy has been used with a great deal of success in many of the Northwest sulphite mills — some of which are now specifying it exclusively for all lead requirements.

The new group of Bunker Hill products includes a full line of bar, cake and wire solders, type and battery metals, block tin pipe, babbitt (bearing) metals, and other alloys, all of which will be marketed under the familiar Bunker Hill trade name and are now being introduced to the West Coast trade.

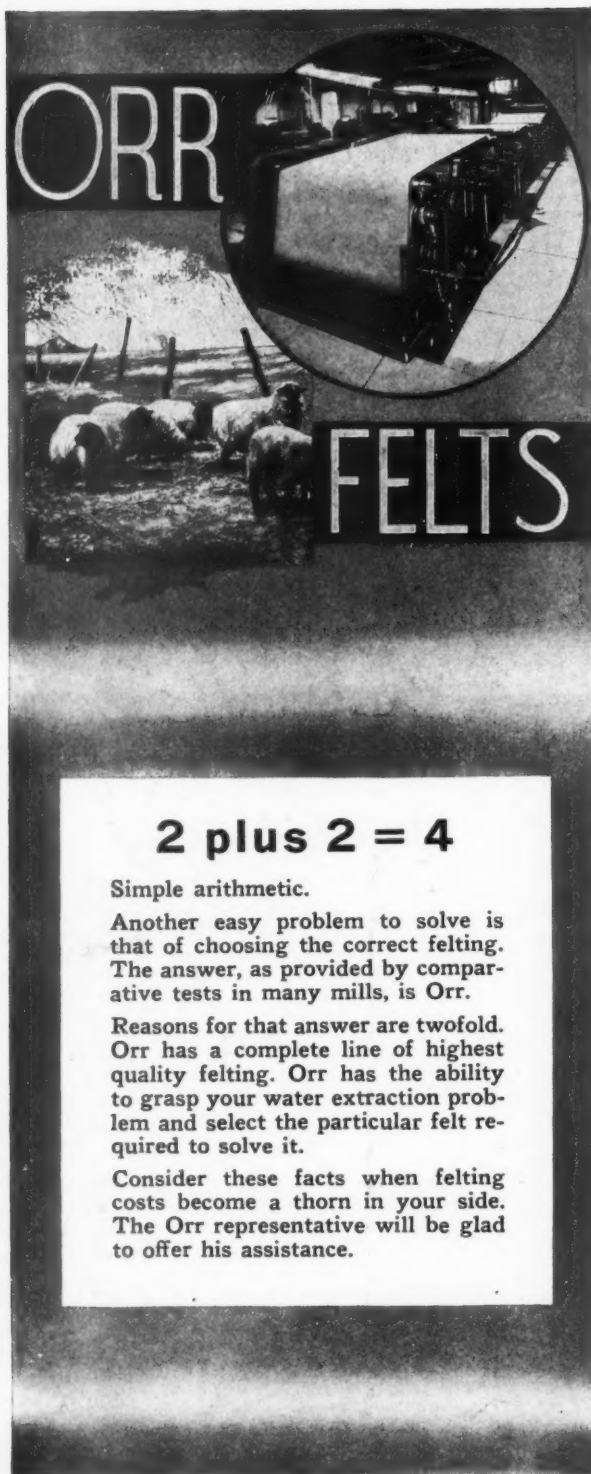
Mr. Lane reports that the plant construction, together with new equipment, involved an expenditure of approximately \$500,000 and places the Northwest Lead Company as the most modern in both plant and equipment of any lead manufacturer in the United States.

This company's manufacturing plant was formerly located at 1744 4th Ave. So., Seattle.



The New Northwest Lead Plant in Seattle





**ORR**

**FELTS**

**2 plus 2 = 4**

Simple arithmetic.

Another easy problem to solve is that of choosing the correct felting. The answer, as provided by comparative tests in many mills, is Orr.

Reasons for that answer are twofold. Orr has a complete line of highest quality felting. Orr has the ability to grasp your water extraction problem and select the particular felt required to solve it.

Consider these facts when felting costs become a thorn in your side. The Orr representative will be glad to offer his assistance.

## The Orr Felt & Blanket Co.

PIQUA, OHIO

Pacific Coast Representative: WALTER S. HODGES  
Pacific Bldg., Portland, Oregon

### To Manage Papers Specialty

Al. P. Durgin, at one time with the Cupples Company, Inc. for a number of years secretary of Food Dish Associates of New York, manufacturers of paper food trays, was a Pacific Coast visitor during May.

Mr. Durgin came West to inspect the plant of the Paper Specialty Corporation in Portland, whose policies he is to direct from New York. John Murphy is in direct charge of the Portland food dish plant under Mr. Durgin.

### Palmer-Luse In New Quarters

A co-partnership was formed a year ago among H. R. Palmer, Ray Luse and W. E. Bingham to form the Palmer-Luse Envelope Co., Los Angeles. The firm was operating previously as the Palmer Envelope Co. at 443 South San Pedro Street. The company is located at new quarters at 606 East Twelfth Street, occupying its own building, a one story structure. With the move additional machinery was added, including a two-color printing press and a new envelope machine.

### Carpenter Paper Building Warehouse

The Carpenter Paper Company of California is at present building a new warehouse at Los Angeles, according to Mr. K. C. Holland, manager. The new structure will be one story and have 70,000 square feet storage space. It is located a short distance from the present offices of the company on Stanford Street. Construction is going ahead and the building will be completed for occupancy September 1st.

### PLASTICS IN BUILDING CONSTRUCTION

The rapidly-increasing use of plastics in building construction was stressed by G. M. Kline, chief of the National Bureau of Standards Section on Organic Plastics, in an address at a meeting of the Federation of Architects, Engineers, Chemists and Technicians. His remarks in part follow.

Organic plastics have become familiar to everyone because of the many useful objects fabricated from them which are found in every modern home. Radio housings, French phones, and electrical devices molded of phenol-formaldehyde resin; bright colored clock cases, table accessories and bathroom fixtures of urea-formaldehyde resin; vanity sets and powder containers of cellulose nitrate; lamp shades and pen and pencil sets of cellulose acetate; buttons and buckles of casein—these are but a few of the plastic products which we make use of from day to day.

Plastics now seem destined to find still wider use in the home and in the building industry in general. In laminated form these materials are finding important applications for interior and exterior trim and several new manufacturing units have been organized recently to meet the growing demand. Installations have been made in theaters, hotel lounges, and bars, banks, and aboard the S. S. Queen Mary, and the material is to be utilized on a large scale in the Library of Congress annex at present under construction.

A laminated plastic is made up of a fibrous filler in sheet form, such as paper, linen, and canvas, and a resin binder, usually of the phenol-formaldehyde type. The individual sheets of filler are impregnated with a solution of the resin, dried, and a sufficient number pressed between steam heated platens in a hydraulic press to give a hard, dense product of the required thickness. Usually a relatively thin sheet of the laminated plastic is applied as a veneer over a less expensive base of pressed board or plywood.

The outstanding advantages which the laminated plastics offer as building materials are superior properties, attractive decorative possibilities, ease of prefabrication, and simplicity of application. The properties which have been of prime importance in the selection of these plastics by architects and builders are their unusual resistance to wear and to corrosion by moisture, acids, alcohols, alkalis, and other deteriorating agents; their excellent mechanical strength; and their dimensional stability.